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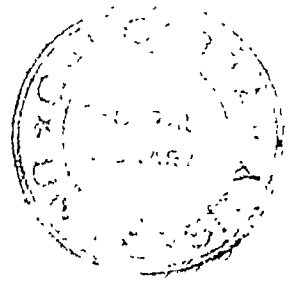
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CALCUTTA UNIVERSITY

JOURNAL OF

INFORMATION STUDIES

150 YEARS OF EXCELLENCE
UNIVERSITY OF CALCUTTA



DEPARTMENT OF LIBRARY & INFORMATION SCIENCE
UNIVERSITY OF CALCUTTA

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INTRODUCTION

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At the outset we should once more record our gratitude to the authorities of the University, among many other things, for permitting us to publish this joint issue clubbing together Vols 7 (2004-2005) and 8 (2005-2006). This year, we are observing with great honour the sesquicentennial celebrations of the university. As a part of the esteemed celebrations this publication of the department is an addendum. Authors of this issue are mostly research scholars and students of our Department. During the period from April 2004 to March 2006, a number of events have taken place.

With deeply felt sorrow, we record here the passing away of Prof. Pramod Chandra Bandyopadhyay (more known as P.C. Banerjee). He obtained the M.A. degree in History from the University of Calcutta. He then got Diploma in Librarianship from the same University. He was one of the two whole time lecturers appointed for the first time in the Department. The other teacher was Late Subodh Kumar Mookerjee. Before joining the Department Prof. Banerjee worked as a Librarian in Central Glass and Ceramic Research Institute (CGCRI), Kolkata. He was a successful teacher usually teaching Classification Theory and Practice. Unlike Prof. Subodh Mookerjee, he did not publish much. Besides a number of articles he wrote a book on Classification in Bengali, published by West Bengal Text Book Board. Prof. Banerjee was deeply involved with organisational activities of the Bengal Library Association (BLA) in fifties and sixties. Later on he along with several colleagues established Institute of Librarians (IOL). This institute published a journal (Indian Journal of Library Science) and started two courses a Certificate Course and a P.G. Diploma Course. IOL however lost steam after a few years.

In the Fourth (4th) Refresher Course for teachers and librarians of universities and colleges Prof. Bhubaneswar Chakrabarti and Dr. Biplab Chakrabarti acted as joint co-ordinators. The theme was 'Books, Bytes and Beyond : Library without Walls'. Among participants were Lecturers and Librarians.

Prof. Bhubaneswar Chakrabarti retired on 31 October 2005 on completing the age of 65 years after a long, remarkable career. Prof. Chakrabarti is however associated with the M. Phil in LIS Course (self financed). He is active in academic work.

Hariprasad Sharma, an ex-student of the Department and an ex-guest lecturer for BLIS (Sessions 2000-01, 2001-02) has been awarded Ph.D from the University under the supervision of Sri Subir Kumar Sen.

Prof. Arjun Dasgupta attended the Asia Pacific Conference on Library & Information Education & Practice (A-LIEP) in Singapore. He presented a paper 'Continuing Education Programmes of Library & Information Science Professionals in the Universities of West Bengal (India) with Special Reference to the University of Calcutta'.

Dr. Biplab Chakrabarti has been elected the General Secretary of the Calcutta University Teachers' Association (CUTA) for the term 2006-2008.

Dr. Swapna Banerjee has been nominated as a member of the Course Development Committee on BLIS of the Netaji Subhash Open University.

The University took up the responsibility of NET Coaching for SC/ST candidates in 2005-06. Two coaching courses have been held. But number of students in LIS were meagre though.

Ten (10) computers have been added to the Computer Labs. Six of them have been purchased from the M. Phil Course fund (self financed).

Librarianship Course in the University was started in 1945. In 2004-05 a Diamond Jubilee Celebration Committee was formed with Dr. Swapna Banerjee, as the Convener. The Committee planned for year long activities. On 24 February 2006, an inauguration function was held. Prof. Asis Banerjee, the Hon'ble Vice Chancellor presided. Dr. A. P. Mitra, FRS, former Director General of CSIR, India delivered the inaugural Address. All the past teachers (both whole time and part time) and non-teaching staff members who were over 65 years and 60 years of age respectively were felicitated. In the afternoon session, a panel discussion was held on the topic 'Role of Information Professionals in Future India'. Prof. Kalyan Dutta, Director, Educational Technology, Jadavpur University, Prof. Susanta Sen, Dean, Technology, Prof. Arjun Dasgupta, Department of Library and Information Science and Dr. Soumitra Sarkar, University Librarian, the University of Calcutta were the Panelists. Prof. Sudhendu Mondal, Director, National Library of India chaired the Session.

Its a great privilege for us that the Journal of the Department has been permitted to insert ISSN 0973-5771.

Biplab Chakrabarti
Hony Executive Editor
CUJIS

শুভ কর্মপথে

শুভ	কর্মপথে ধর' নির্ভয় গান।
সব	দুর্বল সংশয় হোক অবসান।
চির-	শক্তির নির্বার নিত্য বারে,
লহ	সে অভিযেক ললাট পরে'।
তব	জাগ্রত নির্মল নূতন প্রাণ
ত্যাগব্রতে	নিক দীক্ষা,
বিঘ্ন	হতে নিক শিক্ষা—
নিষ্ঠুর	সংকট দিক সম্মান।
দুঃখই	হোক তব বিস্ত মহান।
চল'	যাত্রী, চল' দিনরাত্রি—
কর'	অমৃতলোকপথ অনুসন্ধান।
জড়তাতামস	হও উত্তীর্ণ,
ক্লান্তিজাল	কর' দীর্ণ বিদীর্ণ—
দিন-	অস্ত্রে অপরাঞ্জিত চিন্তে
মৃত্যুতরণ	তীর্থে কর' স্নান।

*Tagore composed this song especially for the University of Calcutta in 1937.
This is the theme song of the University.*

INFORMATION TECHNOLOGY (IT) UNITS OF THE CENTRAL LIBRARY IN THE LIGHT OF 150 YEARS OF THE CALCUTTA UNIVERSITY

ARABINDA MAITI*

Central Library, University of Calcutta

1. Introduction :

Information Technology (IT) becomes an integral part of our day-to-day activities and also in the working environment. In an academic environment where teaching and learning are the essential aspects, IT has become a boon to both teachers and learners. Introduction and adoption of IT is inevitable for the benefits of the professionals. Learning being a continuous process in the academic environment, access to the information available at their place and also in other libraries becomes a must¹. The University library helps (a) for creation of new knowledge and ideas (b) for conservation of known knowledge and ideas (c) for interpretation of recorded knowledge and ideas (d) for teaching of academic and professional courses (e) for research in various fields and disciplines and (f) for dissemination of knowledge and ideas through publication, extension and service. The University libraries are the traditional storehouse of knowledge and information. But as the manual methods adopted in libraries are not sufficient enough, the use of information technology (IT) is of crucial consideration for the libraries.

Definitional aspects of IT :

The term has many definitions and varying interpretations. Generally stated, Information Technology is new technology applied to the creation, storage, selection, transformation and distribution of information of many kinds.

UNESCO defines Information Technology as "Scientific, technological and engineering disciplines and the management techniques used in information handling and processing; their applications; computers and their interaction with men and machines; and associated social, economic and cultural matters".²

According to Dictionary of Computing and Information Technology, the Information Technology means "The acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by mean of computer and telecommunication".³

Objectives of the study :

- i) To identify the different IT units of the central library, University of Calcutta.
- ii) To identify the origin and development of the Central library, CU.
- iii) To find out the different problems for proper organisation of the different IT units in the Central library, CU.
- iv) Finally put the probable suggestions for better organisation of the different IT units in the Central library, CU.

Assistant Librarian and also Research Scholar, DLIS, CU

Methodology :

The work is mainly based on survey as well as physical verification of the different IT units of the Central library, CU.

History of Calcutta University Central Library :

The University of Calcutta was established on 24 January 1857. Since at its inception and for about another fifteen years, thereafter the University had no local habitation of its own, no effective steps could be taken to establish and rear up a University library. Indeed the early sponsors and promoters do not seem to have thought about having a library of their own. When, therefore, the temporary president of the Building Committee of the Presidency College wanted to know the requirements of accommodation of the University, the Provisional Committee of the Senate did not include in their requisition any accommodation for the library.⁴

But five years and five months later, when on 5th June 1862, the Syndicate decided that a separate building for the University was urgently required, they included in the list of their requirements, "a University Library of suitable dimensions and a Reading or Consulting Room" and in order to priority gave it the second place of importance.

Nothing effective, however, appears to have been done before 1869-70, when Babu Joykissen Mookherjee of Uttarpara made a donation (on the 20th July, 1869) to the University of a sum of Rs. 5000/- for the purpose of forming a library in connection with the University. The Syndicate of the University accepted the gift with thanks. But the University had yet no building of its own upto 1970 and the amount had, therefore, to lie in investment.

Soon after the University had come into the possession of and settled down in its own habitat, an additional amount of Rs. 3500/- from the surplus receipt of the University for the year 1873-74, was made to the library fund and nucleus of which had already been formed by the donation of Joykissen Mookherjee of Uttarpara. The Syndicate considered that the amount now available was sufficient for taking steps towards the building up of a University Library, and accordingly appointed a committee to draw up a list of books "of a suitable character" for the library. The Committee recommended that the University library should, as far as possible, be made supplementary to other libraries now existing in Calcutta. Almost simultaneously the University library came to be added by the Council of the Asiatic Society, to the list of institutions entitled to receive copies of journals and proceedings of the society, and also received a complete set of oriental books published by them.

One year later, a set of regulations for the management of the library was drawn up by the library committee, and eventually approved and circulated by the syndicate, along with the catalogue, to the fellows of the university. From the closing balance of the financial year 1875-76, an addition of Rs. 1500 was made to the library fund. A valuable collection of the publications of the early English Text Society was received as gift during this year.

Thus was laid the foundation of the library which has today grown into what may be called the University Library system consisting of a Central Library, two campus libraries and more than forty departmental and seminar libraries. But during the period under review it did not grow beyond a small but valuable

collection of a few thousands of volumes of books and periodicals acquired by purchase or as gift from private individuals. The collection had already come to consist of "besides English works or reference and the chief authorities of Indian antiquities, fairly complete sets of the Sanskrit, Arabic, Latin, French and German Classics."

In 1874 a Committee was appointed to devise the appropriate steps for setting up the library, but by this time 9000 rupees were also available for the purpose.⁵

The Committee recommended the allocation of Rs. 3000 for the purchase of best works in the physical science only. Another Rs. 3000 was recommended for buying different editions, translations and reference books. Of the above amount Rs. 1500 was meant for Sanskrit books, Rs. 500 for Persian and Rs. 1000 for Arabic Language and literature. Rs. 3000 of the fund was recommended for the acquisition of good and standard editions of European classics.

Before 1908, there was no central library for the University. A Motley collection of books adorned some of the shelves in the Senate House. There was no Librarian, no competent staff to assist him. The Syndicate in 1908 was quite content to allocate the sum of Rs. 5000 for the establishment of a University Library. In the course of the last half a century the Central Library of the University has grown from strength to strength.⁶

In 1908, the Hon'ble Sir Rameswar Singh, K.C.I.E. Maharaja Bahadur of Darbhanga, made over the University a sum of Rupees Two lakhs and fifty thousand for the Construction of building in which the library might be located. This magnificent gift was accepted by the senate with thanks and it was decided to name library after the Maharaja who was subsequently nominated as Honorary Fellow for life, as an eminent benefactor of the University. It is here that the university Library was located till May, 1935.⁷

The government of India also at this time gave tangible evidence of their desire to help the University in the attainment of this object. The result was that the Darbhanga Building which at the present moment accommodates the University administrative offices, was built. University Law College and Law library and also some of the University Colleges of Arts and Commerce were located in this building during this time.⁸

In the year 1912, the annual grant of Rs. 65,000 was made by the Government of India, was spent in creating two more professorship, the Hardinge chair of Higher Mathematics and the King George V chair of Philosophy, and in making grants to the University law college and the University library. Out of the capital grant of four lakhs of rupees made at the same time, three lakhs were applied towards the construction of the Hardinge Hostel to be attached to the University law college, and one lakh to the purchase of books and equipment for the University library, which was to be housed in the building named after the Maharaja of Darbhanga.⁹

The year 1935 was significant in the history of the University. Syamaprasad Mookerjee who became Vice-Chancellor in Aug' 1934, took up the helm of the vessel which his illustrious father Asuthosh Mookerjee had fitted and launched on its historic voyage.¹⁰

The University Central and departmental libraries as well as the library

of the University Law College were already existing and flourishing departments of the University. But during the period under review considerable expansion of the activities of the University library system and an orientation of its general outlook and character took place and all the libraries including those attached to the various teaching departments, were thoroughly reorganized and brought under a central control and guidance.¹¹

Since 1917, the University Central Library was divided into two main sections, the Reference and Lending, the reference being located in the first floor of the Darbhanga Building, the lending being transferred to a section of the ground floor of the Asutosh Building when the latter was ready for occupation in 1928.

In both the building, the library halls and rooms were gloomy and there was not enough room either for books or for readers. Organisation and administration were both at low levels and along old and traditional lines; Cataloguing and classification followed cumbersome and obsolete rules; no member of the staff had any technical training in library administration and management.

In 1935, Vice-Chancellor Syamaprasad Mookerjee initiated steps for setting things right. The two sections of the Central Library were amalgamated for administrative purposes and shifted to the newly built third floor of the Asutosh Building where commodious reading and research rooms, periodical and bibliographical reference rooms, and a long one-floor book stack in two tiers were made ready to receive and accommodate books and readers for at least another ten to fifteen years by the end of which period, Syamaprasad Mookerjee thought, the University would be in a position to acquire a site and raise a building specially planned and designed to answer to the requirements of the biggest and richest University Library in this part of the world.¹²

The shifting work of the University Library which was located in the Darbhanga Building to the newly completed fourth storied of the Asutosh Building was done under the Supervision of Mr. Sailendranath Mitra, M.A., Lecturer in the Post Graduate Department in Arts. The University has now a spacious library hall, containing seating arrangements for more than 320 persons and a stack room providing space for more than 1,50,000 volumes. The hall has been equipped in an up-to-date manner and special arrangements have been made for the convenience of lady students, lecturers and Research Scholars. Books are now arranged in open shelves to which the lecturers, Research Fellows, Research Scholars and others have free access, the question of allowing access to students, thereby introducing the open access system to the stack room, is now being considered.¹³

The decoration of the walls of the library hall with fresco painting illustrating the development of Indian culture and civilisation with special reference to contributions from Bengal, which add considerably to the dignity of the Hall.

A periodicals room has been opened in the library in order to display fully all the periodicals received in the library and special seating arrangements have been made there. Special arrangement has also been made for accommodating valuable collections such as Pischel and Dunn Collection, rare books and manuscripts.

On the recommendation of the newly constituted library committee, the

secretary of the Council of the Post Graduate Teaching in Arts and Science has been placed in charge of the library.

The reading room remained open from 7 a.m. to 7 p.m. During the puja and X'mas holidays the library was kept open for the benefits of the Post-graduate students.

During the year 1935, the number of library cards issued for the reference section of the library was 1299 and for the lending section was 654.

The total number of volumes issued to the students and teachers in the library came up to 46,765.

The privilege of taking out books on loan from the library was enjoyed by 1,114 borrowers and 15,970 volumes were lent out during the year. The privilege of allowing students to consult books was extended and they may now use two books at a time.

The total number of periodicals during the year was about 335. Of these 177 were subscribed for, 84 were received in exchange and the rest were presented to the library.

The total number of volumes purchased during the year, was 1985.

During the financial year 1934-35, the sum of Rs. 16,940 was spent for purchasing books for the reference and lending section of the library. The amount does not include those of the libraries of the University College of Science and Technology (Rs. 10,691) and the University Law College (Rs. 2,353).

In 1935, Mr. Niharanjan Roy, post-graduate teacher, was sent abroad for advanced training in library organisation and administration before he could be placed in charge of the entire University Library system.¹⁴

On the technical side too great improvements were made in various spheres of library activities besides adoption of relatively scientific methods of cataloguing, indexing and classification. A tacit acceptance of the principle of recruitment of technically trained personnel in the matter of library appointments, also seems to have been evident. This principle found clearer manifestation when, in 1945, the University initiated a post-graduate diploma course in librarianship under the general supervision and administration of the University librarian, the University libraries serving as the training ground for the students of the course. The University is now introducing this course to the Master's degree standard.¹⁵

Besides routine acquisition by purchase, exchange and small occasional gifts, a number of relatively larger gift collections were received by the University during the period under review. Among them may be mentioned the Dasgupta collection of books on history acquired in 1934, the Bagchi Collection of about 300 volumes on physics, mathematics, French and German Literatures, and the Uma Ghosh Collection of Bengali books by Bengali authors, both in 1937; the Seth Drucker Memorial Collection of standard books on history, politics, economics and literature, in 1945; the Ganga Mahim Collection of about 700 volumes of old Bengali and English books; the P. C. Ghosh Collection of 5,500 volumes, mostly on English language and literature in 1945; the Batakrishna Ghosh Collection on phonetics and linguistics, in 1955; the Dayaram Sahni Collection on archaeology; the Anil Chandra Gupta Collection on literature and

Bengali periodicals, in 1955; the entire library of the late Maharaja Manindra Chandra Nandi of Cossimbazar consisting of about 10,000 volumes of rare books in English and Bengali, in 1955; and the H. C. Mookerjee collection of books on English Literature, politics and economics, in 1956.

Since 1938, the Central Library has been publishing a monthly bulletin which among other things, gives in classified order the title and other particulars of new accessions. Today it keeps its services open for eleven hours, from nine in the morning to eight in the evening, in weekdays and for six hours, from eleven in the morning to five in the afternoon, on Saturdays and Sundays, and meets the reading and reference requirements etc. of hundreds of University Students, research scholars and teachers, not only of Calcutta University but of other Universities as well.

During the year ended on 31st May, 1956, the Central Library issued for reference purposes 2,13,256 volumes of books and periodicals and for home reading 40,456 volumes as against 60,022 and 5,326 volumes respectively in 1933. During the year ended on 31st May, 1956, 8464 volumes were acquired as against 1450 volumes in 1933. On 31st May, 1956, the strength of the total collection of volumes in the Central Library, departmental libraries and seminar libraries stood a little over three lakhs as against a little over a lakh on 31st December, 1933.

A library is a growing organism. This concerns with the growth of the reader, the document and the staff. As a result of three dimensional growth of Central library, it was moved from Asutosh Building to newly constructed nine storied Centenary building on 6th March, 1967.¹⁶

Being the middle of the city, it is easily accessible from all campuses of the University. It has a carpet area of about 80,000 square feet. Before 2002, the library open from 6.30 a.m. to 8 p.m. except Saturdays and Sundays when it was opened from 11 a.m. to 5 p.m. The library collection is arranged subject wise. Faculty members are entitled to getting ten (10) books at a time, PG Students 2 books, research Scholars 5 books and non-teaching staff 2 books. The library provided also consulting facilities to outside scholars, teachers and students of the affiliated colleges for specific period.

The Central Library provided the following services :

(a) Reference Service, (b) Bibliographic Service, (c) Documentation Service, (d) Internet Service (e) Reprographic Service, (f) Lending and Reading Room Service, (g) Access to back issues of journals and (h) Inter Library loan.

The Central Library houses the collection in each floor as follows:

Ground floor

Property Counter, Membership Section, Library Office and Controlling gate

First floor :

Reference Section, Circulation Section, Acquisition Section, Processing Section and Catalogue Cabinets for users

Second floor :

Reading Room, Microfilm and Reprographic Section, Computer Section under INFLIBNET and Demand Counter

Third floor :

UGC-NET Section, Research Block and Journal Section

Forth floor :

Binding Section

Fifth floor :

Bound Journal Section

Sixth floor :

Stack Area-Books

Seventh floor :

Stack Area-Books

Elghth floor :

Stack Area-Books

Ninth floor :

Stack Area-Books

The University Library has a collection of books, journals, theses and non-book materials to the tune of ten lakhs approximately. Besides books, the library possess more than 2 lakh volume of bound journals, M. Phil and Ph. D dissertations, proceedings of conferences, reports, maps, manuscripts, microfilms, CD-ROMs etc. During the year 2002, 7500 new books were added to the stocks. The library subscribed to 794 periodical titles, of which 549 were foreign.

After 2002, different new activities have been achieved by the Central library.

Separate theses section has been organised on the 4th floor of the Central Library and the reference section was shifted from the first floor to the 4th floor of the library. As a result all the reference books and all the Ph. D thesis of the University (14000 title approximately) make available under one roof. The Central Library has created a database of these theses consisting of records of all Ph. D theses of the University. The record structure is based on ISO 2709 format.

The University Library has received a collection of approximately five thousand books including reports, journals from Bengal National Chamber of Commerce along with furniture as gift.

These documents have been kept in the 3rd Floor of the Central Library for the users.

Steps have been taken to organise a separate section in the central library to house the rare publications of the University like old issue of Calcutta Review, old minutes of the Syndicate, Calendar of the University etc. These are centrally collected in the 1st floor of the library adjoining to the processing section.

A study space has been separated out for the research scholars and teachers of the University in the 3rd floor of the Central Library.

The old loose issues of journals and their bound volumes have been displayed in a room on the 5th floor of the Central Library. A Union list of

journals currently subscribed to by the libraries of the university have been compiled in order to keep the teachers, research scholars and students informed regarding the journals available in these libraries.

The book jackets of the new books included in the library are displayed at the display board opposite to the controlling gate and the said books are kept separately for two weeks at the prominent place at the entrance of the circulation section, 1st floor of the library.

The Central library has organized a Career guidance service in the third floor of the Central Library, procuring course materials for competitive examinations for the benefit of the students appearing in the various competitive examinations like IAS/WBCS/NET/SLET/CAT/GMAT/SSC/UPSC etc.

The text book section has been organized on the 2nd floor of the Central Library adjoining the reading room so as to make available to the students under one roof, text books and all other essential reading materials pertaining to different courses of study.

Computerisation and networking of the Central library have been undertaken under INFLIBNET programme of the UGC. The Central Library has started automation of the library activities using SOUL, a user-friendly software from INFLIBNET Centre. The Central library has its own Local Network connected with a server with terminals inside the library. Through On-line Public Access Catalogue the user can now access database of books, journals, theses, CD-ROM and Microfilm available in the Central Library.

The Internet Service is now available in the Central library through leased line. The main server is in the Computer room, 2nd floor of the library. Now four computers are available for the users for internet surfing. Now they get 1/2 an hour facility per day, for free of cost. Facility can be achieved first come first preference basis.

Now the working hours of the Central Library are 9 a.m. to 8 p.m. on all working days except Saturdays and Sundays. It remains open from 11 a.m. to 5 p.m. on Saturdays and Sundays.

Now the Central Library is providing the following services :

(a) Reference Services, (b) Bibliographic Service, (c) Documentation Service, (d) Internet Service, (e) E-mail Service, (f) UGC-NET and Career Guidance Service, (g) Reprographic Service, (h) Lending Service, (i) Reading Room Service, (j) Access to Back issues of Journals, (k) OPAC (On-line Public Access Catalogue) Service and (l) Inter-library Loan Service.

The Central Library houses the collection on each floor as follows :

Ground floor

Property Counter, Membership Section, Library Office, Controlling Gate and Jacket of books display Section.

First floor

New Arrivals—Display Section, Internet Service, CD-ROM and Library Database, Circulation Section, Acquisition Section and Processing Section.

Second floor

Reading Room, Microfilm and Reprographic Section, Computer Section under INFLIBNET programme, Medical Dissertations and Medical books.

Third floor

UGC-NET and career Guidance Section, Research Block, Reading Room for University Teachers, Journal Section and Collection of Bengal National Chamber of Commerce.

Fourth floor

Reference Section and Theses Collection

Fifth floor

Binding Section, University Publications, Stack Area - Bound journals and Rare Publications.

Sixth floor

Stack Area-Books

Seventh floor

Stack Area-Books

Eighth floor

Stack Area-Books and Medical Journals.

Ninth floor

Stack Area-Books.

Origin And Development of it units in the central library :

The origin and development of IT Units in the Central Library is discussed under the following sub heads i.e.

(a) Computerisation, (b) Communication and Networking, (c) Printing, (d) Reprography, (e) Micorgraphy and (f) Conservation.

Computerisation

In the year 1991, first three computers were purchased by the University Central Library.

The specifications were :

- (1) ORBIT PC/AT
with intel 80386 CPU
4 MB RAM
Monocrom monitor
101 Keyboard
- (2) Intel 80381
Monocrom monitor
101 Keyboard
- (3) PCXT with
Intel 8088 CPU
Monocrom monitor
Keyboard

Calcutta University libraries initially used CDS/ISIS which is a menu driven generalized information storage and retrieval system designed specially for the computerized management of structural non-numerical databases, developed

by the Division of Software Development and Applications, office of the Information programs and services, UNESCO.

In the Central library the Ph. D theses database of all the subjects awarded by this University are prepared with the help of this CDS/ISIS package. The total no. of Ph. D theses upto 2004 is approximately 11, 125. Any user can search the database and also go through the printed version of the database of these collection.

Upto 2001, the database also contains books, monographs, journals, microfilms, CD-ROMS etc.

Automation of the Central Library has been undertaken under INFLIBNET (Information and Library Network), an autonomous Inter-University Centre of UGC, in the year 2001. The Central library has started automation of the library activities using SOUL (Software for University Libraries), a versatile and user friendly software from INFLIBNET Centre. this software works in client/server made in windows database creation and web access.

Modules present in SOUL :

Acquisition Module : Suggestions, Order Processing, Accessioning, Payments, Master Database, Reports.

Catalogue Module : Cataloguing Process, Catalogue Search, User Services, Authority File Maintenance, Retrospective Conversion, Reports.

Circulation Module : Membership, Inter library loan (ILL); Overdue charges, Reminder, Search Status, Reports, Maintenance.

Serial Control Module : Suggestions, Subscription, Reminder, Binding, Title History, Import / Export, Search Status, Report.

OPAC (Online Public Access Catalogue) Module :

Books/Theses : Title, Publisher, Author, Accession Number, Subject, Services/ Notes/Volume Search/Class No., Free Text Search, ISBN, Boolean Search

Administration :

In the year 1998, when the network programme was started in the University of Calcutta under INFLIBNET programme 10 computers were purchased for the Central Library.

In the year 2001, again 10 computers were purchased. Therefore the total number of computers upto the year 2004 was 20 (well condition) in the Central Library.

In the recent year 2005, for the Common Internet facility of the students, research scholars and teachers of the University, 12 (Twelve) new computers have been purchased. Another 20 computers were purchased in the month of December 2005. Therefore now 52 computers are in working condition in the Central Library.

Computerisation is in progress in the Central Library. After accessioning, the new books will go to the Processing Section. Then the technical staff prepare the catalogue card after checking the dictionary catalogue, shelf list and OPAC. Necessary subject headings and tracing should also be written on the verso of the catalogue card. Then the current data will entered into the computer and finally save the data. After editing, the staff generate two

printed catalogue cards. The original hand written card will filed in the shelf list and after writing necessary added entries the computer generated cards will filed in the dictionary catalogue which is used mainly by the users.

A complete list of all the medical dissertation submitted for the award MD degree from this University is also completed. Near about 10,000 MD dissertations are there. Students, teachers, research scholars can access directly from the computers kept in the 1st floor of the Central Library through OPAC (Online Public Access Catalogue) module of the SOUL (Software for University Library) software. Any user can search the database by the name of the Research Scholar, Name of his guide, Name of the Department, Name of the title, through free text search by putting any word which is belonging to the title. By every search, he just find the accession number through which the dissertations are arranged in the 2nd floor of the library. Then it is possible to find out the particular dissertation within two minutes. A separate printed volume is also published by the Central library which is arranged alphabetically by the title and also by chronological order of the accession number of the dissertations.

The collection of Sir N. R. Sarkar which he donated to the Bengal National Chamber of Commerce and Industry (BNCCI), when he was the President of the BNCCI was donated to the Central Library, University of Calcutta in the year 2004. A complete list of all these collection is completed. The total number of the document in this collection was 5567.

Through the OPAC of the SOUL software installed into this library, users can have the facility to search the database directly. Printed volumes of this database is also published. The printed volume and the computerised database was inaugurated officially by the President of the BNCCI on 10th Feb, 2005.

The database of the books is prepared in the Computer. From 2001, the new books that were purchased, after preparation of their catalogue card and classification number the data is incorporated into the computer.

The old books which were not processed earlier, also be done with the help of the ex-students of the department of Library and Information Science. They were engaged in the project conducted by the Central Library. For this data sheets were prepared according to the different fields mentioned in the catalogue module of the SOUL software. At first the students filled the information taken from the books, then after searching the existing dictionary catalogue and the shelf list they prepared the classification number and the necessary subject headings. The existing staff of the technical section checked the data sheets and finally it will go to the Computer room for entry. After necessary editing the data is printed into the catalogue cards which is filed into the shelf list and the dictionary catalogue.

Users can also directly search the database of the entire collection which was recorded into the Computer through OPAC (On line Public Access Catalogue) present in the first floor of the library.

At present the total number of records entered in the Computer is as follows:

- i) Books, monographs etc. – 66,000 (approx.)
- ii) Medical Dissertations – 10,000 (approx.)

- iii) Ph. D. Dissertations – 12,000 (approx.)
- iv) BNCCI collection – 5,667 (approx.)

The process is still continuing. The data of the reference section has collected into the datasheets. In near future a complete database of our reference section will be published.

Data has also been collecting from the old found journals which is available in the 5th floor of the library. It is in progress and in near future a complete database of the bound journals will be published.

Communication and Networking :

Calcutta University has started its network function in phases by implementing INFLIBNET programme in the year 1997. A special grant was sanctioned by UGC in 1995 and included CU under INFLIBNET programme for computerisation, networking and upgrading library facilities. In that time, 5 campuses of CU situated in 5 different areas at Calcutta city were interconnected with each other. There were more than 100 IP nodes had spread across the 5 campuses.

From 1998, the Calcutta University network was running through VSAT antenna which was situated at Rajabazar Science College Campus. Central library at College Street Campus and Departments at Ballygunge Campus connected VSAT via INET (X25) leased line. Alipore campus and University College of Medicine (UCM) campus were connected VSAT by suing dialup PSTN line.

Date of connection in different campuses were the following :

Rajabazar Campus : 27.7.1998

Ballygunge Campus : 24.7.1998

College Street Campus : 20.7.1998

Alipore Campus (Dial up) : 6.7.1998

University college of Medicine (Dial up) : 6.7.1998

In the year 1998, the following departments enjoyed the University Networking Services :

In Rashbihari Siksha Prangan (Rajabazar Science College Campus)

Computer Centre, Rash Behari Prangan Central Library (RBPCL), Bio-physics Department, Electronic Science Department, Atmospheric Science Department, Computer Science Department, Radio Physics and Electronic Science Department, Applied Physics Department, Library Complex, Chemical Engineering, Chemical Technology, Plastic and Rubber Technology, Physiology Department, Secretary's Office, Physics Department, DSA (Physics Room), Chemistry Department, Psychology Department, Applied Mathematics Department and Applied Psychology Department.

In Taraknath Siksha Prangan (Ballygunge Science College Campus)

Geology Department, Anthropology Department, Botany Department, Bio-Chemistry Department, B. C. Guha Research Centre, Geography Department, Statistics Department, Pure Mathematics Department, Marine Science Department and Zoology Department.

In Asutosh Siksha Prangan (College Street Campus)

Central Library

In Sahid Khudiram Siksha Prangan (Alipore Campus)

Alipore Campus Library

In University College of Medicine

UCM Library

In the middle of 2002, the University College of Medicine is detached from the University of Calcutta. Now it is under the West Bengal University of Health Sciences. For this reason the UCM College Library was shifted from the University College of Medicine Building to the Central Library, College Street Campus along with the furnitures, books, journals, computers etc. The dial up line was also disconnected.

From 30.09.2002 the LAN line which was within the Central Library, College Street Campus was extended to the Darbhanga Building. Now, E.T.O. Section, Controllers Office Section, our Hon'ble Vice-Chancellor, Hon'ble Pro-Vice-Chancellor (Academic) and also their offices can access the INTERNET.

Now, the Centenary building also connected with the main server of the Central Library. Our Hon'ble Pro-vice Chancellor (BA & F), Internal Auditor, Audit and Finance officer, Accounts Officer, Inspector of Colleges, Deputy Inspector of Colleges, Assistant Inspector of Colleges, Secretary, Faculty council for Undergraduate Studies and also their offices can access the INTERNET.

In the Central Library First floor, only four computers were allotted for the students for searching the INTERNET. They can have the facilities for half an hour on the basis of their order of attendance. Now extra twelve computers are allotted in addition to the previous four i.e. total 16 (sixteen) computers are allotted for the students only for common INTERNET facilities.

Initially the status of the INTERNET facility of the different campuses were as follows :

All the departments of Rajabazar Campus through 64 Kbps leased line.

All the departments of Ballygunge Campus through 64 kbps leased line.

Alipore Campus library through dial up line, University College of Medicine through dial up line, college street, Central Library through 64 kpbs leased line.

From 25.09.2003 the bandwidth of the Internet Connection was changed. In the Rajabazar and Ballygunge Campuses the line was changed from 64 Kbps to 2 Mbps leased line. Therefore the speed was changed rapidly.

In the Alipore Campus, the line was changed from dial up connection to 64 Kbps leased line.

In College Street campus the connection was the same.

In the Economics Department, B. T. Road Campus new 64 Kbps leased line connectivity was established.

In the Hazra Law Campus new LAN line was established which is awaiting for Internet connection.

University Website :

Though the University of Calcutta was established in the year 1857, but till

2002 there was no website of its own. The expected website was inaugurated on 26.03.2003 by our Honourable Vice-Chancellor Professor Asis Kumar Banerjee. The address of our website is <http://www.caluniv.ac.in>

The different areas of the University are covered in this website. Among them the major areas are :

(i) University and its Campuses, (ii) Academic Departments, (iii) Administrative departments and Services, (iv) Courses offered, (v) Affiliated colleges, (vi) Libraries, (vii) Museum, (viii) University Publications, (ix) Industry Institute Partnership Programme, (x) Convocation, (xi) Employment Information and guidance bureau, (xii) News and Announcements, (xiii) FAQ and (xiv) E-Journals under UGC-IFONET Programme.

With University and its campus areas the genesis of CU is discussed. Several campus along with the main campuses at college street are also mentioned along with their areas.

The University has seventy two academic departments. Their name, address, courses offered, intake capacity of each courses, name & specialisation of the faculty members, Major thrust areas of their undergoing research work is also mentioned in the website under the head Academic department.

In the Administrative Departments and Services, Major administrative departments are mentioned along with the names of all the administrative officers. The different activities and their services are also covered.

Different courses, their fees structure etc. are also available from the courses offered items.

228 affiliated colleges are there under this university. Their names, address, zone wise list of the colleges, the subjects which are being taught in the different colleges both pass as well as in honours are also covered under the head affiliated colleges. Before going to admission any students can search in which colleges his preferred subjects are being taught, what is the intake capacity, and what are the papers they can choose as combined papers alongwith their hounours subjects if any. Guardians also have a fresh outline regarding this.

Under libraries section not only the Central Library but also the other different libraries which are present in different campuses are also enlisted here. Other than College Street Campus, other campuses are Rajabazar Campus, Ballygunge Campus, Hazra Law Campus, Alipore Campus, Judge court Campus, B. T. Road Campus where Post graduate courses in different subjects are being taught. Therefore with the help of this website students have the clear idea about the Central Library along with the other libraries present in different Campuses, the address of each and also the different services which they have.

In the Museum column, the rich resources are mentioned which are present in Asutosh Museum of Indian Art.

Any one who is interested to purchase the books and other things published by the University Press, can search through the University website under the column university publications.

Industry Institute Partnership Programme is the important area where different Industries jointly worked with the help of faculty members and students of our Rajabazar Science College & Ballygunge Science College Campus. With the help of them, after passing their M. Sc., B. Tech or M. Tech, the students can directly join the services.

University of Calcutta organises its convocation in every year, where the students, Research Scholars, teachers, dignitaries persons get their award. Speeches of our Hon'ble Governor, the Chancellor of this University and also the speeches of the Hon'ble Vice-Chancellor are covered in this area.

In Employment Information and Guidance Bureau column, different vacancies, if available is mentioned along with the requisite qualification so that students can be benefitted.

In News and announcement column, the new items in different aspects are covered. It may be the new courses, conference, workshops etc.

In FAQ, Frequently ask question, several questions along with the answers mostly regarded to the administrative, academic purposes are covered.

E-journals under UGC-INFONET programme column, the list of electronic journals are enlisted. These e-journals can be directly accessed from any computer of this University, free of cost. We are now in the top position regarding searching of e-journals in India i.e. 64%.

Along with the list the web address are mentioned where from by clicking the users can directly reach to the journals.

Regarding website which is directly controlled by the University Librarian, any information regarding inclusion, deletion and updation, all the heads of the academic departments are timely informed by the University Librarian. If any change is required, the corresponding head sends the information to the University Librarian and then only, the University Librarian will include it into the University website. So, co-operation from all the Administrative & Academic Departments is required to make the website upto date.

The use of our University website is increasing day by day.

E-mail ID :

The University has arranged to provide individual e-mail address for every teacher and officer of the University. Desire research scholars and students may also get this facility against payment. These e-mail address were tied with the university's official website (<http://www.caluniv.ac.in>). Separate password has provided for each e-mail address. Individual users can change their password if they desire according to the guideline.

Therefore through the INTERNET the teachers officers, research scholars can able to communicate with the world easily. The e-mail ID will also increase the Communication facility, in addition as an extra.

Telephone Connection :

The Central Library has its own EPABX Line. The main Box is in the ground floor (Office room) of this library. From 1967-68, the line was established. Now the machine was replaced by the new one in the year 2003. Through this

the staff can easily communicate with the other staff from one floor to another. The Central Library is 9 (Nine) storied building. Since this EPABX Line is exclusively used for the library building, therefore the staff are able to communicate with the other staff so easily and quickly.

Another telephone line connection is present in the library which is connected with the University main EPABX Boxes in the College Street campus. Before 2004 only four (4) lines were allotted for the Central library. Therefore it was not possible easily to get the line from outside, either they have to come to the office or the acquisition section. Other two were in the Deputy Librarian's room and the University Librarian's room. From 2004, January, total 19 (Nineteen) points were allotted wherefrom the staff can contact directly with the EPABX Line of the University.

The library has a direct telephone line that is in the computer room. Librarian's room is parallelly connected with it.

Therefore at present communication with the others is easily possible from the Central Library.

Printing :

When the library was in the Asutosh Building then one handmade printer was within the library. The machine was still lying in the 3rd floor of the Asutosh Building.

No such printing machine (Hand Press) is available in the present Central Library. When the Computers were purchased in the Central Library, Computer Printers have purchased.

Now total 8 computer printers are running in the Central Library. Among them 3 are Epson LX-1050, two (2) are Epson LQ-300, two (2) are HP Laserjet-4000 and remaining one is HP Deskjet 810C.

On 14.10.2004 one new Pass Book Printer (Model-Prze, DMP 80) was purchased for the preparation of the Library cards of the users of the Central Library.

Réprography :

In the Central Library, separate reprographic unit is situated in the 2nd floor of the library. From 1970s it is functioning.

In the year 1970 first xerox machine was purchased which functioned manually.

In the year 74-75 another xerox machine (chemical procedure) was purchased. These two machines were functioning upto the year 1997.

On 17.06.1997 two xerox machines were purchased from RPG Ricoh India Ltd. The photographic model were the following :

1. FT 4027
M/C No. A3636900582
2. FT 4215
M/C No. A3596102190

These were functioned properly and still these are functioning. The demand for xerox of the students, teachers, research scholars is increasing

day by day. Therefore these two are not sufficient for fulfilling the demands of the users.

On 11.02.1999 another machine was purchased from Ricoh India Ltd. The model no. was FT 4327.

Now these three machines are functioning properly and these are under A.M.C. with Ricoh India Ltd.

Students can get the xerox service from 10 a.m. in the morning and it is continuing upto 7 p.m. in the evening.

Micrography :

In the year 1988 one microfilm reader was purchased by the Central Library. The model number was RP507. It was installed in the side by of the Reprographic unit in the 2nd floor of the Central Library.

The microfilm reader is also attached with the reader printer. More than one thousand microfilm of different newspapers etc. can be used by the readers with the help of this machine. They can take the print if they want. Now the machine is out of order. The library authority is trying to repair it.

Conservation Unit :

There is no such conservation unit in the Central Library.

For the preservation purpose, separate initiatives were taken from the very beginning. Regular dusting & cleaning are being with the help of cloth duster and the vacuum cleaner. Now six (6) vacuum cleaners are functioning in the library.

Fire extinguishers are placed in every points of the different floors of the library and refilling the materials is done in regular intervals.

Pest Control is also providing regular intervals. Now pesticides are spread twice in a months in each floors of the library.

For prevention from fire, caused by any electrical hazards, old electrical wiring has been changed. Separate main switch is established in each floor of the library which was regularly on in working hours and off after office hours. Further these are connected with the RCCP connector so that if any short circuit has occurred then it automatically offs the power from the main electrical switch board.

For proper care of the books which has already affected by book enemies such as book worm, silver fish, etc., separate fumigation chambers were purchased in several times. Now in the Central Library two such fumigation chambers are running where paradichloro benzene is used as the pest insecticide. The books which are detected as damaged by insects are kept inside these two fumigation chambers for 21 days. After that the books are placed in their position of the library and again new affected books are inserted into this chambers.

Conclusion :

To be successful in the present century, libraries have to be more proactive and more customer service oriented. The complex challenges of the next ten

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or twenty years require creative leadership, drawing the best from both library leaders and followers in order to meet the demands of their situations and achieve goals. It is time to reevaluate service models that have functioned for years. Being prepared to manage changes can furnish us with the ability to flourish. Libraries should attempt to re-establish standards, criteria, or benchmarks that are considered to be basic to quality library service. Academic libraries in the 21st century need to be learning organizations.

Library consortia or co-operative ventures have grown from a peripheral and limited position of resource sharing to an integrated system-wide resource sharing. This has been made possible by developments in electronic access. Academic libraries now have an improved access to catalogue information that reflects the holding of many individual libraries. In addition, electronic access enables customers to initiate their own search of remote catalogues and make request for information. With the introduction of computers in the libraries and UGC-INFONET initiative in networking and access to scholarly literature most of the libraries can achieve required goals if they can take maximum benefit out of these initiatives.

Therefore for betterment of the providing services to the users the library should adopt the latest techniques of IT available in the market. Not only the adoption of these techniques, but definitely its organisation also be taken into consideration.

Calcutta University central library has adopted different techniques of IT in its different operations.

For computerisation, the library adopt the CDS/ISIS package and also the SOUL software of the INFLIBNET. Now approximately 1 lakh data of the different documents like books, dissertations, Ph.D theses etc. is incorporated into the computer. Retroconversion process is also going on. Readers can access the database directly from the computers through the OPAC (On-line Public Access Catalogue) module of the SOUL software.

The University Central library has maintained the website of the University.

The database of the Medical Dissertations (Near about ten thousand) and the Ph.D theses (Near about twelve thousand) has already been available in the official website.

<http://www.caluniv.ac.in>

All the faculty members of the departments and the officers and also the desired research scholars now have the individual e-mail ID for better communication with the others.

The University now received a lot of e-journals under UGC-INFONET programme free of cost. Through INTERNET the users of this University can access to these journals.

Therefore, in the Central library, the organisation of the IT units is in the developing stage. But to achieve the positive implications of the IT in accordance with the global standard, support from all the professionals, semi-professionals, technicians including other staff is essential. In addition the skill, expertisation, cooperation of the IT professionals of library services of the neighbouring higher educational institute is also essential.

Suggestions :

For better organisation of the various IT units of the Central Library, University of Calcutta, the following are the suggestions which should be taken into consideration :

- 1) The University should encourage and stimulate the retrospective conversion of their catalogue. It should provide fund projects for retrospective catalogues of entire collections.
- 2) There is a need to formulate guidelines, norms and standards for automation, networking and information processing which will be adopted by all the departmental libraries under the University.
- 3) University has its own website and all the Faculty members, officers and desired research scholars have the individual e-mail ID, which is maintained by the University Central library. This should be updated from time to time.
- 4) Under UGC-INFONET programme, University of Calcutta is identified for having E-journals free of cost. The numbers should be increased for betterment of the research scholars, students and faculty members.
- 5) The University library may further be strengthened with required manpower to implement, monitor and execute the UGC-INFONET, E-subscription.
- 6) The University library should subscribe to more web-based resources. It may start Bulletin Board Services to inform the users about the arrival of current, printed as well as online resources, latest books and other materials.
- 7) Use of floppy, CD-ROM, and printing should be extend to the users against payment but keep in mind that in no way it never hampers for affecting the virus to the network or the server.
- 8) The number of xerox machine in the central library should be increased for fulfilment of the increasing demand of the users. Colour Xerox machine at least one should also be purchased.
- 9) Microfilm reader printer which is out of order now should be repaired immediately. If not possible, a new machine should be purchased for searching the data available in microfilm form.
- 10) Two fumigation chambers are insufficient for proper treatment of the books already affected by insects. One additional vaccum fumigation chamber should be purchased immediately for proper care of the large collection of the central library.
- 11) Separate conservation laboratory should be established for proper treatment of the damaged books.
- 12) Digitization lab should be established in the Central Library and also in the departmental libraries by the pooling resoruces from UGC and other funding agencies to initiate digitization process of the Central library and the departmental libraries.
- 13) The library should organise its own binding unit where the rare and valuable books, old register can be bound without taking those outside which is very much risky for the library.

- 14) A majority of the users of the University library, the students in particular, are unaware of various services in Calcutta University central library. They do not generally know what they could expect from the library other than getting books. Therefore the library should take initiative for organizing user Education Programme and provide short term training as basic IT skills for users.
- 15) Documentation services like SDI, CAS etc. should be started as early as possible to save the precious time of research scholars.
- 16) The Central library and the departmental library should conduct user survey for acquiring the information needs of users in the new environment.
- 17) Qualified manpower is generally accepted as being a very important element in the building up of a national infrastructure. The new emerging technology will eventually influence every aspect of library services and therefore, libraries should prepare their employees for this movement. A successful implementation of automation programme requires team efforts.
- 18) Any meaningful process in information technology will require stable economy to take care of the fast development taking place in terms of equipment and systems both of which become obsolete. Being a new area of activity separate funds are needed for libraries for procuring computer hardware and software by establishing the communication facilities and by converting the retrospective data into machine readable form. Maintenance and development of the system and training of personnel require adequate budget allocation.

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Abstract :

This article describes the history of the Calcutta University Library System. There is a thorough description about the present state of the library system of the University of Calcutta. It also gives a vivid explanation about all the libraries of the University of Calcutta in the light of Information Technology (IT).

INFORMATIONAL APPROACH TO FLOW, DIFFUSION AND USE OF MEDICAL TECHNOLOGY : CASE STUDY INDIA, 1950-2000

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1.1 Introduction :

Despite advances in medical diagnosis and therapeutics, diffusion of new medical information to practitioners is typically slow; frequently, it takes years for an important development in medical science to make its way into regular clinical practice.

A development or invention regarding diagnostic methods, equipments, treatments, surgery, preventive medicine, etc. takes place only at a certain place and diffusion of that new development to the other places has to occur. This diffusion is not happened at a time to all the places. There is no uniformity of this diffusion and it is not homogeneous. It depends on the following facilities at the place or region or centre of import and implementation:

- a) **Medical know-how:** without sufficient medical know-how the development of a new technology cannot be implemented at a place.
- b) **Infrastructure:** Implementation of a new development depends well-decorated place. The place or room would be like on a proper decorating and supporting infrastructure.
- c) **Skilled Professional:** Skilled professionals, like doctors are needed for the purpose of the implementation of a new development. The person may be skilled through his/her own study; from other country or through the course curricula.
- d) **Trained Manpower:** A trained technician or operator is needed to operate the technology and support the doctors. The training can be done within the country or outside the country.
- e) **Money:** Financial part always takes an important role for the introduction of a new development.
- f) **Equipments:** Necessary equipments may be needed for the introduction of a new invention at a place. This equipment can be collected directly from the patent holders or it can be manufactured within the country.
- g) **Material:** New material may also be needed for the introduction of a new development at a place. This material can be produce within the country or it can be imported from outside the country. For example, the material **Cobalt 60 for radiotherapy** is produced in India at Bhaba Atomic Research Centre (BARC), but the machine through which the therapy is done is imported from outside of the country.

If there is any gap between the date of invention and the implementation at a region, the people of that region will continue to suffer ailments. Social and National wastage would continue. The more time gap creates more

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wastage. The patient's own society is affected. For example, number of polio patients in India increased by the time the vaccine could be introduced.

Barriers to knowledge diffusion are many. They include clinicians' lack of access to upto-date information resources, ignorance of the availability of relevant information, and lack of time for inquiry as well as poor organization of available information. Progress could be made if up-to-date information, relevant to clinicians' information needs, were rapidly available in all work settings—office, clinic, hospital ward, library, and home retrieval systems, using concepts and modifiers entered directly by clinicians or automatically by electronic medical records systems, with rapid display of chunks of relevant summary information and provide links to supporting evidence and analysis. For this a country like India should have a medical innovation and development-monitoring centre.

1.2 Scope :

This study lists important developments in 50 years between 1950-2000 all over the globe (outside India). Then it is found out how much time it took for each to be adopted and used in India and what information channels and vehicles were used, e.g. Research articles, Demonstration, Course Curricula, visit of doctors etc., as far as practicable.

1.3 Objectives/Purpose :

1. Purpose of the work is to estimate the loss in terms of medical treatment due to gap in time for adaptation of the technology.
2. Main objective is find reasons of the gap.

The important developments in 50 years between 1950-2000 all over the state are listed below:

2.1 Global List :

2.1.1 Preventive measures :

Sl.	Name of the Developments	Annotation	Person responsible for the development	Year of invention	Place of invention	The year in which first introduced in India
1.	Injectable Polio Vaccine (IPV)	A vaccine injectable preparation, which is developed first for polio virus	Jonas Salk	1955	University of Pittsburgh Medical School	1978 (approx)
2.	Oral Polio Vaccine (OPV)	An effective oral preparation of attenuated living virus	Albert Sabin	1962	Poland	1978 (approx)
3.	Measles	Vaccine for an infectious viral disease, usually occurring in childhood, characterized by reddish skin eruptions appearing on the face and body, elevation of temperature, headache and loss of appetite. Can be prevented through immunizations	John F. Enders, Thomas Peebles	1964	U.S.A.	1979 (approx)

Informational Approach to flow, Diffusion and use of Medical Technology

Sl.	Name of the Developments	Annotation	Person responsible for the development	Year of invention	Place of invention	The year in which first introduced in India
4.	Rubella	Vaccine for an illness that can cause birth defects, including congenital heart disease, if a woman contracts it for the first time during pregnancy	Stanley Plotkin	1970	U.S.A.	1979
5.	Hepatitis B Vaccine	A safe vaccine for the hepatitis B virus (HBV), which is spread primarily through blood, unprotected sex, shared needles, and from an infected mother to her newborn during the delivery process. Young children have a 30-50% chance of developing a chronic infection.	Baruch S Blumberg	1981	U.S.A.	1992

2.1.2 Radiology :

1	Cobalt 60 radiotherapy machine	It is a radioactive metal machine that is used in radiotherapy	Dr. Harold Johns	1950	Canada	1969 (approx)
2.	Ultrasound	The first to apply ultrasound as a diagnostic modality in the fields of obstetrics and gynaecology	Professor Ian Donald M.D. and his colleagues	1956	University of Glasgow's Department of Midwifery	1970 (approx)

2.1.3 Chemotherapy :

1.	Cancer Chemo-therapy	A therapy with the help of rays to prevent cancer	National Service Centre	1955	U.S.	1965 (approx)
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2.1.4 Surgery :

1.	Surgical therapy (Close heart surgery)	The first close heart surgery ("Mitral Valvotomy" for "Mitral stenosis")	Cutter and Levine	1923	USA	1952 P.K. Sen
2.	Surgical therapy (Open heart surgery)	Open heart surgery under cardio pulmonary by pass (i.e.) non beating heart) Ventricular Septal Defect (VSD)	Lillehee	1954	USA	1961 K.N. Dastur

3.	Micro-surgery	Reported the first successful rabbit ear re-plantation to the Plastic Surgery Research Council Meeting. This was a milestone in the development of the field of microsurgery because it was the first report of an amputated part successfully reattached using blood vessels 1 millimeter in size.	Harry Buncke	1964	Kansas City, Kansas	1974
4.	Modern Cryosurgery	They built a cryosurgical probe capable of freezing brain tissue, with good control over the site where the cryogenic lesion was produced. Their cryosurgery probe is essentially the prototype from which every future cryosurgical probe using liquid nitrogen was built.	Irving Cooper, and an engineer, Arnold Lee	1961	Most probably in Australia	1970 (approx)
5.	Liposuction	A usually cosmetic surgical procedure in which fat is removed from a specific area of the body, by means of suction.	Dr. Giorgio Fischer.	1974	Italy	1983 (approx)
6.	Laser vision correction. Or Excimer laser surgery	The first patient to undergo laser vision correction was treated. The highly sophisticated excimer laser uses light energy to correct focusing problems by vaporizing away a small amount of tissue from the central area of the cornea. Most surgical laser beams affect tissue by producing heat that burns it, or by producing a shock wave that separates tissue with micro-explosions.	Dr. Steven Trokel working with Dr. Srinivasin.	1983	U.S.A	1990 (approx)

2.1.5 Machines and Instruments :

1.	Cardiac pacemaker	World's first cardiac pacemaker in 1950. The device was far too large to be implanted inside of the human body. It was an external pacemaker	John Hopps	1950	Canada	1966
2.	Fetal monitors	Hammacher's invention measures heart sounds by use of a contact microphone and provides outputs distinguishing the first and second heart sounds of each heart cycle by generating impulses coincident with each heart sound. While the first and second heart sounds are distinguished and separately	Prof. K. Hammacher and Hewlett-Packard	1968	Germany	1978 (approx)

		analyzed, the first and second heart sounds are not differentiated by the timing relationships between the heart sounds in the overall heart cycle but merely by the state of a flip-flop which changes state upon the detection of each heart sound to thereby output two series of pulses, one for each heart sound in each heart cycle.				
3.	Telemedicine	Probable the first transmission of radiological films over telephone lines took place in between West Chester and Philadelphia		1948	Pennsylvania, U.S.A.	1965 (approx)
4.	CT-SCAN	A computer-assisted scanning technique. It was especially useful for looking at head injuries and brain problems, because it showed about 100 times greater detail in soft tissues than traditional x-rays.	Godfrey N. Hounsfield and James Ambrose	1973	Britain	1981 (approx)
5.	MRI (Magnetic resonance imaging scanning)	Magnetic resonance imaging or scanning (MRI) is a method of looking inside the body without using surgery, harmful dyes or x-rays. The MRI scanner uses magnetism and radio waves to produce clear pictures of the human anatomy.	Dr. Damadian	1977	U.S.A.	1985 (approx)
6.	The Artificial Kidney Dialysis machine	The device, made of aluminium, wood and cello phone, was to serve as a model for the kidney machines used throughout the world today.	Willem J. Kolff	1985	Netherlands	1995

2.1.6 Medical Therapy (Drugs):

1.	Contraceptive, oral	The birth control pill was introduced to the public	Gregory Pincus, Min Chuch Chang, John Rock, Carl Djerassi	1951	U.S.A.	1970 (approx)
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3.1 Data Analysis:

3.1.1 Preventive measures:

Injectable form of killed **polio vaccine (IPV)** became available in 1995, resulting in widespread administration in schools and clinics in industrialized countries across a broad age range resulting in a marked drop in cases in these countries. In 1962, the **oral polio vaccine (OPV)** replaced IPV and continues to be the vaccine of choice for eradication of the virus. Despite initial low coverage, the

vaccine showed itself capable of dramatically reducing the number of polio cases when administered to a wide age range over a short period of time. In India however the polio vaccine as IPV and OPV were introduced most probable at the same time (1978). It took 23 years for IPV and 16 years for OPV. There were huge gap between the invention and the introduction of the two polio vaccines. The reason behind it was that the Government was no such policy and programme to implement it into the country. In the third world there has been the additional problem of social or governmental breakdown. India is one example.

Measles vaccine was invented in the year 1964 in USA and introduced in India in 1979. It took 15 years of time to implement in India. Measles is a leading cause of childhood deaths. Every year around 3 million cases of Measles are seen and about 900,000 children die because of Measles around the world. In India everyday, 500 children die because of Measles. The most worrying part is that the vaccine coverage against Measles in India is only 66% and even below 50% in many states.

Rubella vaccine was first introduced in the World in 1970. It took 9 years to implement in India (i.e. it was introduced in India in 1979).

Hepatitis B vaccine first introduced in India in 1991 which was 10 years latter of the first invention in the World in 1981 in U.S.A.

Though in India, the topics Preventive and Social Medicine was included in the Medical Curricula in the year 1961 the above developments were not included in it. These developments were included something in the amendments in 1985 and in details in the year of 1997-98. The name of the paper changed into Community Medicine in the year 1978.

3.1.2 Radiology :

There were tremendous developments in the field of radiology in the World over the few decades. One important invention among them is **Cobalt 60 radiotherapy machine** in the year 1950 in Canada but in India it was introduced after 19 years i.e. in the year 1969 (approx).

Another important development was **Ultrasound** in the year 1956 and it also was introduced in India in 1970 i.e. 14 years latter after it's invention in the World.

In India the topic radiology was in the medical curricula in the year 1961 but detail inclusion of the above development were done in the curricula in 1978 and the more modern concepts about the above were included in the curricula in 1997-98 and in 2000 amendments.

3.1.3 Chemotherapy :

World's first **Cancer Chemotherapy** was introduced in 1955 and it was first implemented in India in 1965 which was 10 years later of the first introduction in the world.

The concept of Chemotherapy was adopted in the medical curricula in India in 1978.

3.1.4 Surgery :

Surgery started a very long time ago. Now surgery and medicine, in general,

are so advanced we can make the blind see. The first **Closed Heart Surgery** was done in the world in 1923. In India this type of surgery was first introduced in 1952 by Dr. P. K. Sen. It took 29 years to introduced in India.

Open-heart surgery under cardio pulmonary by pass (i.e. non-beating heart) Vernacular Setal Defect (VSD) was done first in the world In 1954. But In India it was adopted in 1962 i.e. it took 8 years to implement in India.

The first **Microsurgery** was done in the world in 1964 and introduced in India in 1974 after the 10 years of it's development.

The **Modern Cryosurgery** was first introduced in the World in 1961 which was 9 years before the first introduction in India in 1970.

World's first **Liposuction**, a cosmetic surgical procedure in which fat is removed from a specific area of the body, by means of suction, was done in 1974 in Italy. This type surgery in India was done first in 1983 which was 9 years later after it's invention.

The first **Laser vision correction Or Excimer laser surgery** was done in the world in 1983. But India It was first introduced in 1990 i.e. 7 years later of it's discovery.

In India the education about Closed and Open Heart Surgery were included in the medical curricula in 1961. Modern Cryosurgery and Microsurgery were included in 1978 and in details in the amendments in 1985. The details inclusions of Liposuction and Laser vision correction or Excimer laser surgery in the medical curricula in India were done in 1997-98 changes.

3.1.5 Machines and Instruments :

World's first **Cardiac pacemaker** was invented in 1950 and introduced In India in 1966. It took 16 years of time to implement in India.

The first **Fetal monitors** was developed in the year 1968 in Germany. But it was introduced in India 10 years later i.e. in the year 1978.

A **computer-assisted scanning technique (CT-Scan)** especially useful for looking at head injuries and brain problems was first introduced in the world in 1973. It took 8 years time to implement in India i.e. in 1981.

World's first whole body **MRI (Magnetic Resonance Imaging)** system was introduced in 1977. This system was introduced in India 1985. It took 8 years to implement in India.

The **Artificial Kidney Dialysis machine** was introduced in the world in 1985 at Netherlands. But India it was incorporated first in 1995. It took 10 years to adopt in India.

In the Medical Curricula in India details about Cardiac Pacemaker was included in 1978 and 1985. Something about Telemedicine was included in 1985 and in details in 1997-98 and in 2000. The inclusions of Fetal Monitors, CT-Scan, MRI and The Artificial Kidney Dialysis Machine were done in the medical curricula in 1997-98 and in 2000 amendments.

3.1.6 Medical Therapy (Drugs) :

Oral Contraceptive, the birth control pill was introduced first in the world in 1951 whereas it was first introduced in India in 1970 i.e. 19 years later of it's discovery.

The development about the Oral Contraceptive was included in the Medical Curricula in India in 1978.

3.2 Mean and Standard Deviation :

The number of years taken to introduced for the individual developments in India were:

Sl. No.	Developments	Years (x)	x ²	Rank
1	Injectable Polio Vaccine (IPV)	23	529	10
2	Oral Polio Vaccine (OPV)	16	256	7
3	Measles Vaccine	15	225	6
4	Rubella Vaccine	9	81	3
5	Hepatitis B Vaccine	10	100	4
6	Cobalt Radiotherapy Machine	19	361	9
7	Ultrasound	14	196	5
8	Cancer Chemotherapy	10	100	4
9	Closed Heart Surgery	29	841	11
10	Open Heart Surgery	8	64	2
11	Microsurgery	10	100	4
12	Modern Cryosurgery	9	81	3
13	Liposuction	9	81	3
14	Laser vision correction Or Excimer laser surgery	7	49	1
15	Cardiac pacemaker	16	256	7
16	Fetal Monitors	10	100	4
17	Telemedicine	17	269	8
18	CT-SCAN	8	64	2
19	MRI	8	64	2
20	The Artificial Kidney Dialysis machine	10	100	4
21	Oral Contraceptive	19	361	10
	Total	276	4082	

Hence, the average number of years has been taken for the implementation of each development in India is $276/21 = 13.1$ years.

The Maximum delay was of 29 years in the case of Closed Heart Surgery and the Minimum delay was of 7 years in the case of Laser vision correction. Or Excimer laser surgery to introduced in India. The reason behind the maximum delay can be summarized as (i) History suggests that older physicians adapt more slowly to new technologies, possibly because they feel competent in their diagnostic skills and experience has made them confident in their craft. (ii) Lack of availability of skilled professionals and manpower. (iii) Unavailability of proper infrastructure. (iv) Delay inclusion in the medical curricula.

On the other hand due to enormous technological and communicational development, availability of sufficient skilled manpower, quick changes/

amendments in medical curricula, financial availability, etc. the Laser vision correction Or Excimer laser surgery introduced in India just within 7 seven years of it's development.

The Standard Deviation (S.D.) of the above data can be calculated as follows:

$$\begin{aligned} \text{S.D.} &= \sqrt{\sum x^2 / n - (\sum x / n)^2} \\ &= \sqrt{4082 / 21 - (13.1)^2} = \sqrt{194.38 - 171.61} \\ &= \sqrt{22.77} = 4.772 \end{aligned}$$

Therefore the range of mean time gap is 13.1 ± 4.772

3.3 Reason behind the Time Lag :

The reason for the time lag between the discovery of a development in the world and the implementation or incorporation in India can summarized as follows:

3.3.1 Financial unavailability :

There has been several isolated initiatives from various organizations and hospitals for the implementation of the developments or the projects. But the technology and communication costs being too high, make it financially unfeasible.

3.3.2 Lack of basic amenities :

In India, nearly 40% of population lives below the poverty level. Basic amenities like transportation, electricity, telecommunication, safe drinking water, primary health services, etc. are missing. Any technological advancement can't change a bit when a person has nothing to change.

3.3.3 Technical constraints :

The developments supported by various types of technologies, still needs to mature. For correct diagnosis and pacing of data, we require advance biological sensors and more band-width support.

3.3.4 Quality aspect :

"Quality is the essence" and every one wants it, but can sometimes create problems. In case of health care, there is no proper governing body to form guidelines in this respect and motivate the organizations to follow, it is solely on organization how they take it.

3.3.5 Government support :

The government has limitations and so does private enterprises. Any development in its primary stage needs care and support. Only the government has the resources and the power to help it survive and grow. But in India we are not the favored ones. There is no such initiative taken by the government to develop it.

3.3.6 Biological consistency :

Diagnosis itself is a complex process and symptoms of disease are not consistent so that it is difficult to implement a new development or treatment.

3.3.7 Perspective of medical practitioners :

Doctors are not fully convinced and familiar with the development sometime.

3.3.8 Late Inclusion In the Curricula :

There were huge gap between the invention of a development and the inclusion of the same in the medical curricula.

3.3.9 Political constraints :

Sometimes political constrain took an important role for the late incorporation of a development in India.

3.3.10 Lack of skilled manpower :

Due to the unavailability of skilled professionals, like doctors other users of the technology the time lag is high for the implementation of a new development or technology.

3.4 Some Solutions :

The above problems can avoid if we the following guidelines to implement a new invention in India:

3.4.1 Social and Political :

- i) Active participation of the society is needed;
- ii) Strong political will is essential;
- iii) We should involve NGO volunteers with these activities.

3.4.2 Educational :

- i) Medical Council should provide continuous Medical Education of users like doctors other technical persons.
- ii) Sufficient training programme should be taken for health care professional, patients and other persons.
- iii) Specialized training is essential.

3.4.3 Financial :

The government has limitations and so does the private sector. A combined effort from both is needed. In private sector-drug manufacturer, technology manufacturers, different research institutions, software, hardware companies, computer education institutes and corporate hospitals can play a major role in it.

3.5 Discussion :

It is found that most of the gap period cluster between 8 and 10 (total 11 cases). Another smaller cluster range between 14 and 17. We have taken only small sample from among a vast number of medical development of the second half of the 20th Century. If we can enumerate and study all the developments the scenario will be surely changed. Study may also be done if there has been any change in time gap over the years from late 19th Century to early 21st Century. Another gap period cluster between 14-17. There is no pattern in the time gap range 8-10 (11 items) and 14-17 (5 items). We could not decipher any real cause for this time gap.

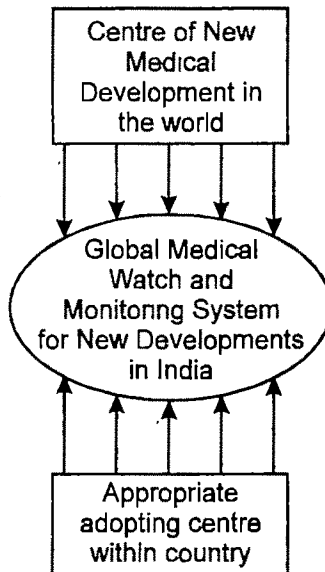
3.6 Suggestions :

The foregoing data and results show that India is still at a receiving end of

medical technologies. Most of the medical technological developments occur abroad especially in the developed countries. Gap in introduction, use and diffusion of these techniques result in large number of population to continue to suffer. Our informational approach is to be to close the gap as far as practicable. Information awareness is to be made into the nation and among the policy makers in a regular way that what is being developed anywhere in the world in respect of preventive measures, therapy, surgery, treatments, etc.

A monitoring system is to be created in the country. As soon as the monitoring system comes to know about any development, it would try to find out ways & means of transfer of the technology into the country. And would explore the possibility of Telemedical links between the center of development and appropriate adopting centers within the country. If this can be done then it is hoped that the average time gap from 13.1 years may reduce to 1 or 2 years.

The Indian Centre for Global Medical Watch and Monitoring System for New Developments in the Medical Field can be designed as follows :



The monitoring system can be developed as a computerized networked documentation and dissemination centre. The information workers in the centre are to be specially trained for medical knowledge awareness and understanding. They would look up at all sorts of information sources, Newspapers, T.V. Channels, Websites for capturing any event of new medical development. The centre should also have volunteers (particularly medical practitioners) within and outside the country who would also notify any new development, any of them come across.

As soon as a new development is registered, as much information as possible should be gathered about the development and an awareness campaign among the medical organizations, associations, institutions, medical academic institutions and individuals should be started. The government agencies and policy makers such as bureaucrats and ministries should be notified. There should be a panel of NGO's private and public hospitals and

research institutions willing to introduce, adopt or to develop substitution or alternative techniques and technologies. A crash programme can then be started involving the government institutions and the NGO's. There would be a tremendous plan, effort to do all these but is not improbable if not easy.

The scope of NHIC (National Health Information Centre) under ICMR (Indian Council of Medical Research) may be suitable unified and broadened to do this watching, monitoring, documenting, denominating, and linking up work.

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5.1 Reference

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Abstract

The paper describes the important developments of medical information in the last fifty years. It also gives a thorough analysis about the information channels which were used in India for the development of medical technology in the last fifty years. There is also a brief description about the information-gap in medical science.

'PRESERVATION SYSTEM'—A SURVEY ON COLLEGE LIBRARIES OF DARJEELING DISTRICT OF WEST BENGAL IN RELATION TO CLIMATIC CONDITION

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Introduction :

A library is an organisation which facilitates the interaction between people and the information they need. The college library is one of the institution's principal educational resources. Preservation of libraries collection is as important as the acquisition of the collection. Morrow defined 'Preservation' as the action taken to prevent, stop or retard deterioration. Preservation is the process in which attempts are made to resist or delay the deteriorating effects of the environment and the like. 'Preservation system' means to chalk-out preservation plan and programme at management level. That means 'Preservation system' is the sum total of preservation policy, preservation techniques and development of new models for selection of preservation criteria and directions for the future.

No college and university can do effective work in the academic community without a good library at its centre. The basic common efforts of all college libraries should be to meet the legitimate needs and demands of all their users from the senior teacher to fresh students (graduate and post-graduate). The collection of the library should reflect the educational philosophy and objectives of the institution. The collection embraces all subjects. A college library should have a general collection, general and specialized reference and research materials; rare materials, newspapers and periodicals; dissertations, clippings, visual and audio-visual materials and increasingly - computers and auxiliary machines. But the result of the survey work on college libraries of Darjeeling district, shows that most of the libraries in this area provide only books i.e., textbooks and reference books. A few colleges contain newspapers, periodicals, maps, charts etc. in their collection. In recent years, computers with other electronic gadgets have made their place in college library collection and are considered to be as essential as books.

A library becomes famous for its rich, rare holdings. Naturally, preservation of such materials should, therefore, be the prime concern of such a library. Preservation refers to the processes of monitoring the physical condition of the library's materials and taking action to prevent further deterioration. In a tropical country like India, they urgently need protection and temperature control for their conservation. So, there is a clear distinct relationship between 'Preservation system' and 'Climatic condition'. The most important environmental factors, which influence the physical condition of library materials, are relative humidity, temperature and light. According to Library of Congress preservation

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recommendations, an ideal environment for books is 55°F in storage areas (below 70°F is better), with relative humidity levels at 50 percent. Very low humidity can cause paper to deteriorate, while high humidity encourages the growth of moulds and mildew. Books or paper documents deteriorate more rapidly at high temperature and with drastic changes of temperature and humidity. In case of light, both natural and artificial light contribute to heat build-up in the building. Exposed part of the paper becomes yellow and the colour of ink becomes fade when it comes in contact with UV radiation - the most damaging form of light. The fluctuation of temperature and humidity is very harmful to paper document. In tropical country, this fluctuation is very high. In Darjeeling district, relative humidity remains high almost throughout the year. However, temperature is not a very dominant factor for deterioration in these colleges. Temperature remains low in winter season and medium in other months. But, humidity is a major factor for deterioration of books. Relative humidity reaches the maximum level in rainy season. The best possible solution to protect the paper documents from this kind of climatic fluctuation is air-conditioning. But in reality, most of the colleges (both Govt. and Non-Govt.) suffer from financial crises i.e., lack of fund. So, air-conditioning system is a dream for those colleges.

Objectives :

The specific objectives of this study were as follows:

- i) To identify the causes of damage of library materials in the colleges of Darjeeling district.
- ii) To determine the proper infrastructure for implementation of the 'Preservation system'.
- iii) To chalk-out an appropriate preservation plan and program in the decision-making level of those colleges.
- iv) To discuss the real picture regarding preservation system of Darjeeling district college libraries.
- v) To find out proper preservation techniques which can be applied to preserve documents in college libraries of Darjeeling district of West Bengal permitting the fund of those institutions.

Methodology :

- i) The college libraries of Darjeeling district of West Bengal were taken into consideration in this study.
- ii) This study was limited to the preservation system of the library documents. So, the procedure of data selection was based on year of establishment of the colleges. It is seen that out of the total 15 no. of colleges, only 8 no. of colleges consist of old and rare documents. In this study, the newly established colleges were not considered.
- iii) The study was based on 'Survey method' to find out appropriate preservation system suitable for Darjeeling district college libraries where the climate is mainly cold and humid.
- iv) For the purpose of the study, 'Questionnaire method' was followed. A questionnaire was designed and distributed among the 8 no of respondents.
- v) The 'Observation method' was also followed by the researcher and most of the college libraries were observed personally.

Presentation of relevant data in tabular form

Table - 1 : Type of documents

Type of Documents	Name of the Colleges					
	Kalimpong College	Kurseong College	Loreto College	Salesian College	Siliguri College of Commerce	St. Joseph's College
Books	12,892	9,337	15,450	26,120	11,000	44,379
Serials	5	951	43	74	8	36
Govt. & Institutional Publication	—	—	—	1	2	50
Audio-Video Materials	—	—	—	325	—	26
Micro Documents	—	—	—	—	—	—
Charts, Maps, Models	—	30	—	70	—	11
Pictures	—	—	—	70	—	—
Globes	—	—	—	—	—	—

Inference can be drawn from table - 1 that the collection of all Darjeeling district college libraries are mainly books and serials (newspapers, journals etc.). Amongst them Salesian college, Kurseong College and St. Joseph's college contain annuals, conference proceedings, audio-visual materials, maps, charts etc. Pictures are present only in Salesian college.

Table - 2 : Distribution of User Strength In Libraries

Type of users	Name of the Colleges				
	Kalimpong College	Kurseong College	Loreto College	Salesian College	Siliguri College of Commerce
Teachers	51	—	26	20	20
Research Scholar	—	—	—	5	2
Students	465	>500	450	200	1800
Administrative Staff	5	—	6	10	22
Others	—	—	Y	—	—
					17

Table - 2 shows that the user category in the above colleges are mainly teachers, students and administrative staff. Besides this, a small number of research scholars are present in Salesian college, Siliguri College of Commerce and St. Josephs college. No data is available for number of teachers, staff, etc who use the library in Kurseong College.

Table - 3 : Shelving Methods used in Darjeeling district college libraries

Shelving Methods	Name of the Colleges					
	Kallimpong College	Kurseong College	Loreto College	Salesian College	Siliguri College of Commerce	St. Joseph's College
Open Shelves	Y	Y	Y	Y	Y	Y
Almirahs	Y	Y	Y	Y	Y	Y
Map Drawers	N	N	N	Y	N	N
Microfilm Storage	N	N	N	Y	N	N
Any other Arrangement	N	N	N	Y	N	N

It is evident from Table - 3 that library documents, mainly books and journals, are stacked in open shelves and almirahs in most of the colleges. It is remarkable that proper arrangements for other non-book materials e.g., maps, micro-films etc. exist only in Salesian College.

Table - 4 : Climatic Zone and climatic characters of the district

Sl. No.	Name of the Colleges	Geophysical character				Thermal Condition			Humidity		
		Coldest zone	Hottest zone	Damping zone	Temperate zone	Cold	Hot	Temperate	Humid	Sub-Humid	Semi-Arid
1	Kalimpong College	Y	N	N	N	Y	N	N	Y	N	N
2	Kurseong College	Y	N	Y	N	Y	N	N	N	N	Y
3	Loreto College	Y	N	Y	N	Y	N	N	Y	N	N
4	Salesian College	Y	N	Y	N	Y	N	N	Y	N	N
5	Siliguri College of Commerce	N	N	Y	N	N	N	Y	N	Y	N
6	St. Joseph's College	Y	N	N	N	Y	N	N	Y	N	N

Table - 4 shows that all colleges of Darjeeling district, except Siliguri College of Commerce, exist in coldest zone. Amongst them, Loreto College, Kurseong College, Salesian College and Siliguri College of commerce fall under damping zone also. The thermal condition of the location of these colleges is cold. Humidity is maximum in most of the months of the year in case of above colleges except Siliguri College of Commerce. Siliguri falls under sub-humid category and Kurseong College under semi-arid category.

Table - 5 : Climatic condition (month-wise) of the district

Sl. No.	Name of the Colleges	Months											
		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1	Kalimpong College	Coldest	Cold	Dry	Hot	Hot	Humid	Humid	Humid	Pleasant	Pleasant	Pleasant	Cold
2	Kurseong College	Coldest	Cold	Dry	Humid	Humid	Excessive Humid	Excessive Humid	Excessive Humid	Humid	Pleasant	Pleasant	Cold
3	Loreto College	Coldest & Dry	Cold & Dry	Mild-hot & Cold	Hot	Hot	Humid	Humid	Humid	Pleasant	Pleasant	Cold	Coldest
4	Salesian College	Cold	Cold	Dry	Humid	Humid	Humid	Humid	Humid	Pleasant	Pleasant	Pleasant	Cold
5	Siliguri College of Commerce	Coldest	Cold	Mild-hot	Hot	Hot	Humid	Humid	Humid	Humid	Pleasant	Cold	Cold
6	St. Joseph's College	Coldest & Dry	Cold & Dry	Dry	Humid	Humid	Excessive humid	Excessive humid	Excessive humid	Pleasant & humid	Pleasant	Pleasant & dry	Coldest & dry

It is seen from the above table that the climatic condition of the location of these colleges, with the exception of Siliguri College of Commerce, is coldest and dry in the month of January and February, mid-hot in March, hot and humid in the month of April and May, excessive humid in the months of June, July and August, pleasant in September, cold and pleasant in October and November and cold and dry in December. The climate of Siliguri is coldest in January, cold and mid-hot in February and March, hot and humid from April to September, pleasant in October and cold in November and December.

Table - 6 : Presence of Maximum Humidity in air

Sl. No.	Name of the Colleges	Months											
		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1	Kalimpong College	N	N	N	N	N	Y	Y	Y	N	N	N	N
2	Kurseong College	N	N	N	N	Y	Y	Y	Y	N	N	N	N
3	Loreto College	N	N	N	N	N	Y	Y	Y	N	N	N	N
4	Salesian College	N	N	N	N	N	Y	Y	Y	N	N	N	N
5	Siliguri College of Commerce	N	N	N	N	N	Y	Y	Y	N	N	N	N
6	St. Joseph's College	N	N	N	N	N	Y	Y	Y	N	N	N	N

Table - 6 shows that relative humidity is maximum in the months of June, July and August in colleges of Darjeeling district.

Table - 7 : Seasonal Pest Attack

Sl. No.	Name of the Colleges	Season			
		Dry Summer	Monsoon	Autumn	Dry winter
1	Kalimpong College	N	N	N	N
2	Kurseong College	N	Y	N	N
3	Loreto College	N	N	N	N
4	Salesian College	N	Y	N	N
5	Siliguri College of Commerce	N	Y	N	N
6	St. Joseph's College	Y	Y	N	N

It is evident from Table - 7 that pest attack is observed only in monsoon season in libraries of Salesian College, Siliguri College of Commerce, Kurseong College and St. Joseph's College when humidity is maximum in air.

Table - 8 : Infrastructural facilities of the library building of the colleges

Sl. No.	Name of the Colleges	Infrastructure				
		Proper design of library building to withstand variation of climate	Number of rooms	Ceiling Heights	Proper ventilation	Proper lighting system
1	Kalimpong College	N	1	Standard	N	N
2	Kurseong College	N	3	Standard	Y	Y
3	Loreto College	N	3	Standard	Y	Y
4	Salesian College	Y	5	High	Y	Y
5	Siliguri College of Commerce	N	3	Standard	Y	Y
6	St. Joseph's College	Y	2	High	Y	Y

Table - 8 shows that properly designed library building is existent in Salesian College and St. Joseph's college. In most of the cases, ceiling height is standard. Proper ventilation and lighting system exists in all the above colleges except Kalimpong College.

Table - 9 : Causes of damage of documents

Sl. No.	Name of the Colleges	Causes of damage											
		Dust	Dirt	Smoke	Light	Heat	Humidity	Fungi/ Insects/ Bacteria	Rodents Etc.	Human Belings	Natural Calamity	Flood	Fire
1	Kalimpong College	Y	N	N	N	N	Y	Y	N	N	Y	N	N
2	Kurseong College	Y	N	N	N	N	Y	Y	N	N	N	N	N
3	Loreto College	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
4	Salesian College	Y	N	N	N	N	Y	Y	N	N	N	N	N
5	Siliguri College of Commerce	Y	N	N	N	N	Y	Y	N	N	Y	N	N
6	St. Joseph's College	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

The above table shows that library documents are mostly damaged by dust, dirt, humidity, fungi, insects, bacteria etc. In some cases, smoke, light, heat, human beings, natural calamities also act as damaging factors for paper documents.

Table - 10 : Preservation Policy

	Name of the Colleges					
	Kallimpong College	Kurseong College	Loreto College	Salesian College of Commerce	Siliguri College	St. Joseph's College
Preservation Policy	Y	N	N	Y	Y	Y
Preservation Unit	N	N	N	Y	N	N
Any kind of grant for this purpose	N	N	N	N	Y	Y

This table shows that a strong preservation policy exists in all Darjeeling district college libraries except Kurseong college and Loreto college. It has also been seen that a separate preservation unit is present in Salesian college, Siliguri College of Commerce and St. Joseph's College do their preservation work from their college fund and library fees fund.

Table - 11 : Preservation Techniques

Sl. No.	Name of the Colleges	Preservation techniques												
		Regular cleaning		Proper handling of documents	Alternative methods			Others						
		Dry cleaning	Wet cleaning		Use of Electrical fans	Ventilation Ducts	Spraying of insecticides	Fire Extinguishers	Strict vigilance	Fumigation chamber	Special technique	Air-conditioning system	Digitization of data	
1	Kalimpong College	N	N	N	N	Y	N	N	N	N	N	N	N	
2	Kurseong College	Y	N	N	Y	Y	N	N	Y	N	N	N	N	
3	Loreto College	Y	N	Y	N	N	Y	N	Y	Y	Y	N	N	
4	Salesian College	Y	N	Y	N	Y	N	Y	Y	Y	Y	N	Y	
5	Siliguri College of Commerce	Y	N	Y	Y	Y	Y	Y	N	N	N	N	N	
6	St. Joseph's College	Y	N	Y	Y	Y	N	Y	Y	Y	N	N	N	

Inference can be drawn from Table-11 that regular dry cleaning method, proper handling of documents, spraying of insecticidal solutions e.g. baygon, thymol in methylated spirit etc., and strict a vigilance is kept on preservation technique in most of the Darjeeling district colleges. In a small no of colleges fire extinguishers have been installed. 'Fumigation chamber' is present in Loreto College and Salesian College. Use of electrical fans with heater has been adopted as special preservation technique to maintain the room temperature in Loreto College. Digitization of data is in progress in Salesian college. Air-conditioning system is absent in all the above colleges.

- vi) The opinion of the Meteorology department of Alipore, Govt. of West Bengal is taken into consideration.
- vii) Relevant related literature on academic libraries perservation system were consulted.
- viii) Collected data is analysed and inference is drawn accordingly.

Data Analysis and Interpretation :

Out of the 8 respondents, one college is under Govt. college category and the other seven colleges belong to Non-Government, college category. A total of eight questionnaires were administered and 6 filled-in questionnaires were obtained from the colleges. The percentage of respondent was 75. So, 75% population were selected for data analysis.

Conclusion and Suggestlons :

Darjeeling district is situated in northern part of West Bengal. The northern part of the district of Darjeeling is mountainous. The height of Darjeeling district is 2134 meter and above. The climate of this district, except that of Siliguri sub-division, remains cold throughout the year. The climatic condition of Siliguri is cold in the month of November, December and January and the other months are either hot or humid. The relative humidity reaches a maximum level in the months of June, July and August.

From analysis of the above data (in tabular form), it can be interpreted that the collection of Darjeeling district college libraries are based mainly on paper documents. Paper is a very water sensitive material which expands and contracts with every change in humidity. These changes gradually break the structure and strength of the cellulose chain of the paper. As a result the paper becomes weak and brittle. High humidity is favourable condition for fungus growth. Pest attack reaches the maximum level in monsoon season.

In most of the colleges of this district, books and other documents are kept in open shelves. We know that documents are damaged mainly by dust, dirt, smoke, light, heat, humidity, insects, rain, fire and human belngs. Proper handling of documents is not followed in all colleges. Proper designing of library building, proper ventilation, proper lighting system in room are absent in most of the colleges.

Analysis of data shows that regular cleaning is organized in the above libraries to control dust, dirt etc.

'Insecticidal solution' mainly 'Baygon' is sprayed in most of the colleges. Strict vigilance is maintained in almost all colleges.

'Fire extinguishers' are present in most of the colleges.

'Fumigation chamber' is also present in two colleges of this district.

'Air conditioning system is not available in all colleges of Darjeeling district but electrical fans are used in two colleges of this district to control the room temperature. From this survey work, we come to know that an appropriate preservation policy is taken up at management level in almost all colleges of this district, but finance is major problem for a librarian to implement preservation work. There is no special grant for this work.

The suggestive steps are :

- i) Proper designing of library building should be done. It is essential for protection of library documents.
- ii) Regular use of vacuum cleaner (dry cleaning method) and spraying of insecticidal solution should be followed.
- iii) Mapping-up the floor regularly should be done in all college libraries.
- iv) Strict vigilance should be an essential part of the library work.
- v) 'Fire extinguisher' should be kept in all college libraries.
- vi) Library documents (paper documents) should be kept in glass covered almirahs and electronic documents in dust-proof jackets.
- vii) All college libraries should procure 'Fumigation chamber' to restore the physical condition of the paper documents.
- viii) If fund permits, 'air conditioning system' should be installed in library. Preservation of library materials in proper way is a costly affair. In a developing country like India we should be cautious in managing funds. To ensure preventive conservation, appropriate storage system, environmental control, handling and processing of documents etc. demand primary attention. There should be a well-thought preservation policy regarding collection of materials, watchfulness over the process of deterioration, prolonging the longevity of the materials in alternative form. Lastly, I will say that in such work the objective of preservation of the particular library as also its financial implication should be kept in view.

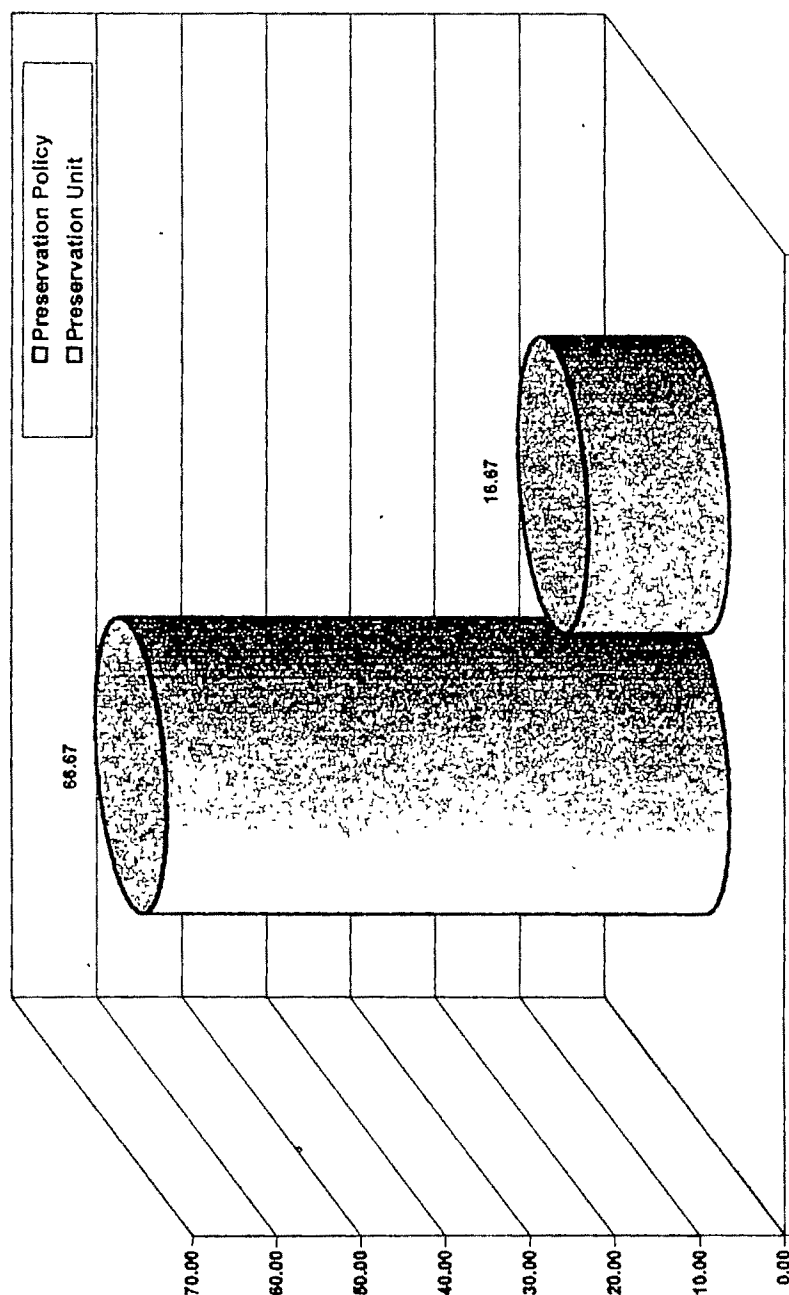
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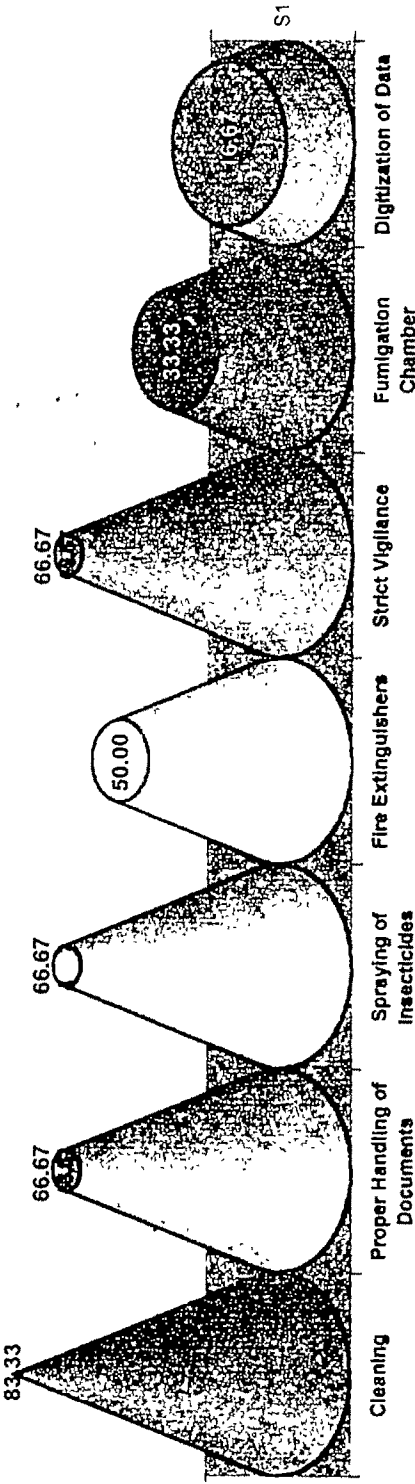
Abstract :

This paper deals with mainly 'Preservation system' of college libraries of Darjeeling district of West Bengal and it is related with the climatic condition of this district. The steps involve in this study are Introduction, objectives of the work, methodology, analysis of data in tabular form, interpretation and lastly, the conclusion and suggestions.

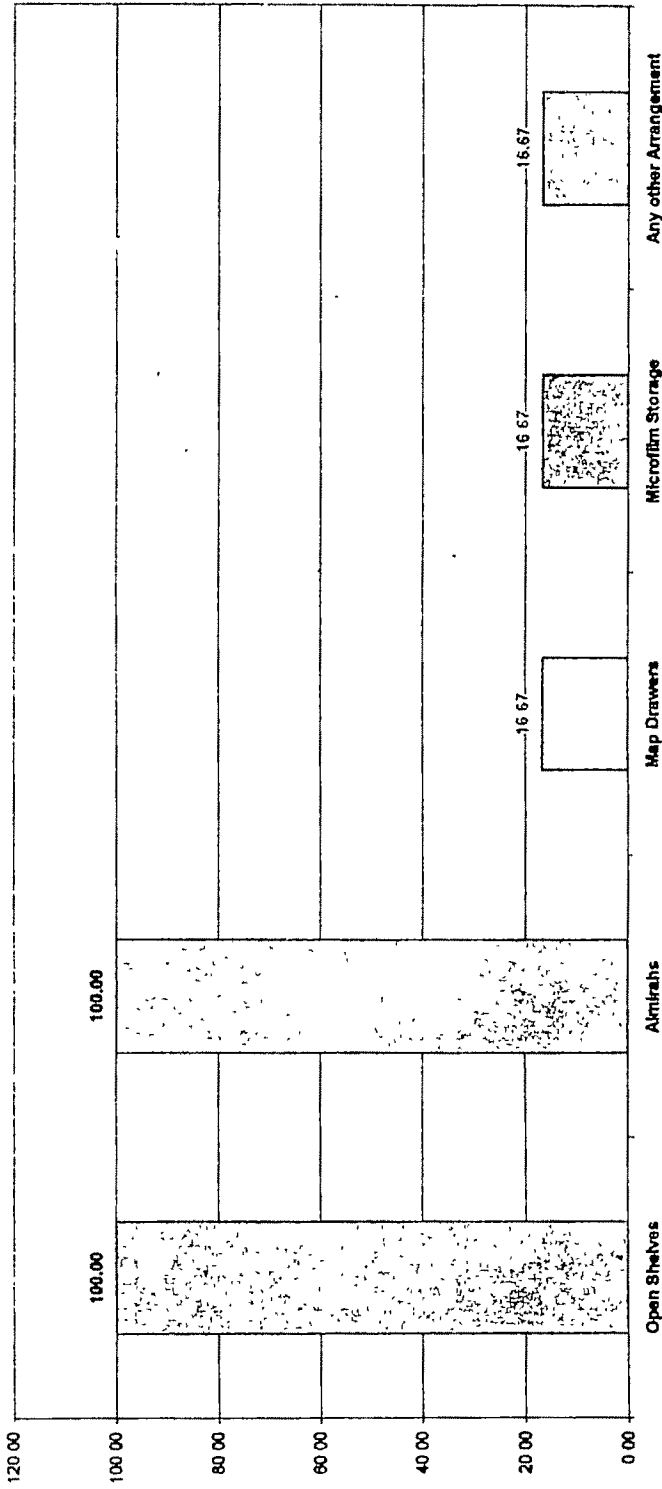
PERCENTAGE DISTRIBUTION OF PRESERVATION POLICY AND PRESERVATION UNIT PRESENT IN
DARJEELING DISTRICT COLLEGE LIBRARIES



PERCENTAGE DISTRIBUTION OF TYPES OF PRESERVATION TECHNIQUES FOLLOWED IN COLLEGES
OF DARJEELING DISTRICT



PERCENTAGE DISTRIBUTION OF SHELVING METHODS USED IN DARJEELING
DISTRICT COLLEGE LIBRARIES



INFORMATION NEEDS OF COTTAGE INDUSTRIES: A SURVEY ON NORTH 24 PARGANAS DISTRICT

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Introduction :

Information is a crucial ingredient for the socio-economic development of the people. People need information for self development and with this individual development the total economy of a country is developed. In India the economic and social development are reflected also by the industrial community. Among the various sectors of the industrial community cottage industries have been given special emphasise by the Government of India in the Tenth Five Year Plan. Village industries are nothing but the cottage industries which are set up in rural areas and very simple tools and machineries are used to produce articles. Rural artisans are usually dispersed in a large number of scattered villages. Illiteracy or low standard of education and poor economic condition are considerable impediment to rapid implementation of development programmes. Lack of information like other factors is very important attribute responsible for slow progress of village industry's programme.

The current information plays a vital role for the development of all types of industries especially cottage industries. But the sources and mechanisms that carry, process and supply of information are traditionally poor at the village level. The people engaged in cottage industries very much depend on their traditional methods to gather their required information for the production of various articles due to a large number of workers being illiterate. Community surveys regarding the required information, utilization of sources of various information, awareness of the modern technological developments of industries etc are necessary for taking a plan for the development of these industries. In this regard, considering the above factors a survey was conducted on the traditional and current information required by the people engaged in cottage industries situated at villages of North 24 Parganas District of West Bengal.

Review of Literature :

The research works among the industrial community are mostly dealt with the information needs of large scale and small industries. Community information services were developed first in U. K. and then U. S. A. In India very little attention has been given to deal with community information services of rural areas.

Dr. Biplab Chakrabarti¹ has worked on Toto Community in Sub-Himalayan North Bengal, India, regarding their information seeking behaviour. He came to the conclusion that illiteracy and ignorance are the main obstacles to express their desire but the Totos demand for more information in many cases. Dr. Chakrabarti made an opinion that as the majority of the community members

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are economically poor and disadvantaged the community should endeavour to boost their standard of life by providing information on different socio-economic activities of the world at large.

S. K. Musib and M. Mahapatra² made conclusion that most of the cottage industries in the rural areas depend much on self, friends, neighbour, fellow professionals, market/shop keepers for various current information requirements. Most of the workers are ignorant about the recent development of technology rather they only depend on the traditional methods of production. However a large number of the workers are interested towards the use of public library services.

Dr. Joyati Ghosh³ has remarked that large, medium and cottage industries need information preinvestment information and current operational information. Besides she has given a list of information required on export guidance for the product.

Governmental Effort :

The Government of West Bengal also provides information to the cottage and small scale industries to a greater extent through its two departments :

- i) Directorate of cottage & small scale industries; and
- ii) District Industries Centre. But out of these two wings the function of the Directorate of Cottage and small scale Industries are mostly unknown to the village community. Again the services provided by the District Industries Centre (DIC) are more favourable for the small industries. Generally the DIC provides information to the cottage industries through its industrial extension officers. A little effort has been made possible to provide information to the cottage artisans. Therefore the State Government has decided to establish Community Library Cum - Information Centre in every village of West Bengal where there is no public library to provide information to various categories like carpenters, black-smith, potters, weavers, businessmen, housewives, tailors, students, various artisans etc.

North 24 Parganas District :

The district consists of 89,30,295 population⁴ out of this 45.70 percent live in rural areas and 54.30 percent of the total population of this district live in urban areas. There are 22 blocks, 1599 villages and 27 municipalities in the district as given in table-1. The district has 221 public libraries and 18 Community Library Cum Information Centres.⁵

Table-1 Population and Community Information Centre in the District.

Population		Blocks	Villages	Municipality	Public Library	Community Library cum Information Centre
Urban	Rural					
4849150	4081145	22	1599	27	221	18

Objectives of the study :

The objectives of the study were:

- i) To determine the information needs (both current and traditional) of the cottage industries;

- ii) To identify the sources of information used to procure the current information;
- iii) To assess the role of library/information centre for providing information;
- iv) To know the opinion about the necessity of establishment of the community information centre in the locality;
- v) To find out the opinion regarding the use and non-use of library/information centre; and
- vi) To find out their satisfaction regarding the profit of the industry.

Methodology and scope :

Scope and Coverage :

The study was carried on to the cottage industries situated in North 24 Parganas district of West Bengal, India. There are 2410 cottage industries⁶ in North 24 Parganas district scattered through 1599 villages and 27 municipalities⁷. 96 cottage industries were covered in this survey dealing with 43 village leather, 36 hand made paper and 17 Ghani and Palm Gur.

Methods :

The technique used for selection of industries was random sampling. Random selection of 96 cottage industries scattered through 84 villages were made. Villages were selected randomly from the district first by breaking it into sub-divisions and then into blocks of the district. Cottage industries producing handmade paper, gur and leather articles were only chosen. Besides only one type of a particular industry was taken into consideration from a single village to avoid repetition of data.

Collection of Data :

The data were collected through observation and questionnaire cum interview methods. Through the observation method the data were collected by the Investigator during the stay at Basirhat by observing the characteristics of the village artisans. The main primary data were collected through interview method and for this the investigator approached to the industries directly for taking interview. A questionnaire was prepared according to the objectives. Sufficient care was taken during the interview for those who were responsible for industry's maintenance, producing the products, procuring the raw materials and selling the products within the industry.

The secondary data i.e. official data were collected through government records available in different governmental departments like census of India, District statistical hand book etc.

The primary data were recorded in specially designed slips and a diary was maintained during the survey to note down the date of taking interview. The data were tabulated for analysis and findings.

Analysis of Data :

The analysis of data is presented below:

Sample Characteristic :

Table-2 provides various characteristics of these industries. It is seen that 6.33% of the total surveyed population are below 18 years of age, 46.66% are within the age group between 18 and 30 years, 41.13% are in the age group of 31 and 50 years and 5.7% belong to the age above 50 years. It is also stated

that 91.06% of these industries are of male workers. Again 55% of the surveyed workers are belonged to the general category, 26.86% are from scheduled caste and remaining are other backward classes. When education of the workers was considered it is found that 27.1% of the population were illiterate, 27.2% had low standard of literacy (upto class IV) and most of these persons (42%) had high schooling level.

Table-2 : Sample Characteristics

	Village leather		Handmade paper		Ghani and Palm Gur	
	No	%	No	%	No	%
1. <u>Age groups</u>						
Below 18 years	2	4.6	1	2.7	2	11.7
18-30 years	20	46.5	21	58.3	6	35.2
31-50 years	16	37.2	12	33.3	9	52.9
Above 50 years	5	11.6	2	5.5		
2. <u>Sex</u>						
Male	39	90.6	34	94.4	15	88.2
Female	4	9.3	2	5.56	2	11.7
3. <u>Category</u>						
GEN	21	48.8	19	52.7	11	64.7
SC	18	41.8	14	38.8		
ST						
OBC	4	9.3	3	8.3	6	35.2
4. <u>Education</u>						
Illiterate	14	32.5	7	19.4	5	29.4
upto IO	12	27.9	13	36.1	3	17.6
Middle/High School	15	34.8	16	44.4	8	47.0
Graduate	2	4.6	—	—	1	5.9
Ohters (training course)	9	20.9	—	—	3	17.6
5. <u>Experience</u>						
Blow 10 years	7	16.2	10	27.7	2	11.7
10-20 years	24	55.8	22	61.1	13	76.4
21-30 years	10	23.2	4	11.1	2	11.7
Above 30 years	2	4.6				
6. Industry as only source of income						
YES	13	30.2	13	36.1	6	35.2
NO	30	69.7	23	63.8	11	64.7
7. Associated with other organisation						
Yes	6	13.9	6	16.6	3	17.6
No	37	86.0	30	83.3	14	82.3

Industries were not only source of income of the families (66%) that satisfy the characteristics of cottage industries. Village or cottage industries are mainly carried on along with other earnings of the families. Maximum number of the persons dealing with village leather had other source of income (69.7%) followed by the persons engaged in gur manufacturing (64.7%). Almost 84% of the persons of these industries were not associated with other organisation and they depend on agriculture sector.

Table-3 Information Needs :

Sl No	Types of information	No. of respondents	Percentage of total respondent who need information
1.	Production problem	17	17.7
2.	Raw materials	36	37.5
3.	Competitive products	21	21.8
4.	Technical know - how	35	36.4
5.	Market Trends	49	51.0
6.	Trade Statistics	8	8.3
7.	Tenders and contracts	48	50.0
8.	Govt. policies	36	37.5
9.	Change of tools	19	19.8
10.	Export guidance	11	11.4
11.	Financial	42	43.7
12.	Association's policies	17	17.7
13.	Maintenance	50	52.0
14.	Training course	11	11.4

N.B. : As single person suggested more than one option the total percentages would amount to more than 100% when added up.

Information Needs :

Data were collected from 96 units to identify the information needs of cottage industries dealing with manufacturing of leather, handmade paper articles and gur. It was revealed that 52% of the total surveyed population had the need of information on maintenance of tools, (table-3). Table-3 also shows that 51% of the population required information on market trends including new market area, price level of the product whenever required to be changed and 50% of the persons had the need of information on tenders and contracts of their finished products.

The survey also revealed that 43.7% of the surveyed population had the need of information on financial matter. The cottage workers of these industries required loan for investment to their industries. It was revealed that 37.5% of the respondents needed information on both raw materials and different policies taken by the government from time to time respectively.

It was revealed that 36.4% of the surveyed population had the need of information on technical know how. The persons engaged in village leather industries had the maximum need of information about the recent development of technology in connection of their industries.

21.8% of the respondents required information on competitive products regarding the price and quality of the similar product. It was revealed that 17.7% of the respondents required information both on production problem and the association's policy respectively. It was also revealed that 19.8% of the respondents required information on change or improvement of tools or machines and 11.4% each of the surveyed population had the need of information both on training courses available for the production of concerned product and export guidance regarding the procedure for obtaining export licence respectively. Only a few respondents (8.3%) required information on trade statistics.

Sources of Information Used :

In order to identify the sources of information used either earlier or to know current sources of information the respondents were interviewed to mention the important sources for collecting different information towards the industries.

Table-4 : Sources of Information Used by the Cottage Workers

Sl. No.	Type of Sources	No. of Respondents	No. of Responses	% of Responses total of Respondents
1.	Self	96	64	66.6
2.	Family Members	96	54	56.2
3.	Friends and relatives	96	51	53.1
4.	Market/Shop keepers	96	46	47.9
5.	Fellow professions	96	41	42.7
6.	Mahajans/Middle men	96	37	38.5
7.	Library/Information Centre	96	20	20.8
8.	T.V., Newspaper, Radio	96	19	19.8
9.	Customer/Agent	96	18	18.7
10.	Block/Panchayat Office	96	17	17.7
11.	Cooperative Society/ Association's meetings	96	17	17.7
12.	Service holders	96	9	9.3

N.B. As single respondent suggested more than one sources of information the total percentage would be more than 100% when added up.

The table-4 shows that the persons engaged in these cottage industries depend on twelve sources for collecting their required information. Majority of the respondents (66.6%) required information through self experience, 56.2% of the respondents depended on family members, and 53% from the

representatives of friends and relatives. The survey also revealed that 47.9% of the respondents collected information through market place and shopkeeper. 42.7% got the required information from fellow professions, 38.5% required information through mahajans or middle men and 20.8% from the representatives of public libraries or community library cum Information centres or District Industries centre. It was also revealed that T.V., newspaper were used (19.8%) to get information to some extent. The other sources like customer, blocks and panchayat, cooperative society and service holder are less used by the respondents.

It can be stated from the above analysis that the persons engaged in cottage industries depend on mainly traditional methods but the persons nowadays has become aware towards the modern technological development as library/information centre and T.V. newspaper are used as sources of information to some extent for getting the required information.

Information by Library or Information Centre :

Most of the respondents expressed dissatisfaction about the role played by the library/information centre in the locality or outside the locality. Table-5 shows that 16 respondents told that library/information centres have met 25% of their required information and 4 respondents suggested that the library and information centres met 50% of the total required information. Seventy two respondents suggested that there is no role of library/information centres to meet the required information. The persons engaged in village leather had the maximum satisfaction towards the role played by library and information centre as compared to other two industries. They expressed that they got information through District Industries Centre to some extent.

Table-5 : Meet of Information by Library/Information Centre

Meet of total Information in %	Village leather		Handmade paper		Gur		Total
	No	%	No	%	No	%	Average (%)
Completely	Nil	—	Nil	—	Nil	—	
75	Nil	—	Nil	—	Nil	—	
50	3	7.0	1	2.8	Nil	—	3.3
25	9	20.9	5	13.8	2	11.7	15.4
Not at all	31	72.0	30	83.3	15	88.2	81.1

9. Need for Rural Information Centre

Most of the respondents suggested to the establishment of community information centre or rural information centre (RIC) in their respective villages. The aims of RIC may be to collect the required information and organize and disseminate information to the rural people. The users may be categorized as cobblers, carpenters, tailors, students, housewives, potters, rural artisans, etc., Table-6 shows that almost 69% of the respondents were in favour of establishment of RIC in every villages, while 31% of the surveyed population revealed that already existing information providers are sufficient to provide information.

Table-6 : Need for Rural Information Centre

Total No. of Respondents	No. of Respondents felt need of RIC (%)	No. of Respondents do not feel the need of RIC
96	66 (68.75)	30 (31.25)

Use of Library/Information Centre :

The data were collected also to know whether the persons engaged in these industries have ever visited or contacted a library/information centre for any problem faced by them. Only twenty eight respondents (29.1%) mentioned that they have contacted for collecting information but maximum of them are not satisfied about the services rendered by the present library/information centre. Sixty eight (70.8%) respondents had never visited a library due to several reasons as shown in table-7.

When question was asked to mention the reason for non use of library/information centre out of these respondents who had not used ever, 50% of those respondents told that they had no time but had the willing to use the library/information centre. Again 23 (33.8%) respondents thought that information available from other sources are enough to meet their required information, 17 respondents (25%) thought library/information centre would not have sufficient information and 13 respondents (19.1%) mentioned that they had already information.

Table-7: Visit of a Library/Information Centre and reasons for non-visit.

No. of respondents visited/ contacted (%)	No of respondents who did not visit (%)	Reasons for non use of library/information centre (%)		
			No	%
28 (29.2)	68 (70.8)	Have already information	13	(19.1)
		Library would not have sufficient information	17	(25.0)
		Get information from other sources	23	(33.8)
		No time	34	(50.0)

Satisfaction About the Industry's Profit

Most of the respondents were satisfied about the profit of their industries. Table-8 shows that 57 respondents were satisfied about the profit of their industries and 39 respondents were dissatisfied.

Table-8 Satisfaction about the Industry's profit

No. of Respondents	Who satisfy (%)	Who do not satisfy (%)
96	57 (59.3)	39 (40.6)

Suggestions from the respondents

The following suggestions were emerged from the opinion and recommendations received from the respondents.

- The State Government should enlarge the items of cottage industries for providing subsidies on raw materials.
- The present day information services are not sufficient to meet the information of the villagers. There should be set up one Rural Information Centre/community Information centre in every villages to collect and disseminate the information required by the rural people.
- The State Government should take responsibility directly for providing loan whenever required by the village people. The cottage workers have to pay a certain percent of the total loan required to the middle man or the staff responsible for disbursing the loan amount. The policy should be taken by the Government by enforcing the commercial banks in such a way that loan be disbursed without any delay or obstacle.
- Library professionals or industrial extension officers should come forward to contract directly with the cottage industries to know the problems faced from time to time.
- The State Government should arrange more training courses through library or District Industries centre.

Conclusion :

Information has become an important social attribute in decision making and overall control in cottage industries. The present library services and even information services rendered by the District Industries Centre must be organized properly by collecting the required information of the people. Community Library cum Information Centre in the villages is urgently needed. The cottage industries are mainly depended on self, friends and relatives, fellow professions, family members but these industries also depended on other sources like customer, market/shop keeper and library/information centre to some extent for collecting information towards their industries. Most of the cottage industries need information on maintenance of the products and rawmaterials, market trends and technical know-how. So the required information of these industries have changed to lesser extent as compared to the earlier days. Most of the persons engaged in cottage industries earn money from other sectors also to some extent.

It was found that illiteracy is one of the obstacles for collecting their needed information. A large number of respondents expressed their desire to use library/information centre although they have no time.

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Abstract

This study gives a detailed description about the information systems, sources and services of the cottage industries of North 24 Parganas district of West Bengal. The information needs and the role of libraries and information centres are explained here in a lucid manner

HISTORY AND DEVELOPMENT OF KNOWLEDGE MANAGEMENT

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Introduction :

The history of managing knowledge may have started in the prehistory of man. Over the years the civilization has been built up of knowledge. In the early days, knowledge moved orally and by contact. The elderly people were living repositories of the community. Respect towards the elders was for their knowledge and experience. Interactive knowledge-sharing is also an age-old process—a group of persons talking under the tree, village square debates, town meetings, *chandi mandaps* (meeting places for formal and informal discussions on social, cultural, religious issues, entertainment and sometimes penal issues prevalent mostly in Eastern India), professional consultations, meetings, workshops, and brain storming sessions—all functioning to enable individuals to share what they know with others in the relevant area of knowledge. Persons migrating from one place to another were a principal mode of knowledge transfer across geographical barriers. Although long term and short term migration still effect direct and indirect knowledge transfer, the technology—telegraph, telephone, fax, Internet, video-conferencing, etc.—offers the opportunity for instantaneous distance learning and enables in principle fast transfer of knowledge worldwide. Knowledge sharing occurred also in traditional flow of information and experience from one generation to the next, from mother to daughter, father to son, mentor to protégé, master to pupil, etc.

Importance of knowledge and recording of information can be traced to the stone edicts and inscriptions, the archives of Sumer and Akkad in Babylonia and Ebla in Syria, easily transportable records on papyrus in Egypt, parchments in Greece, clay tablets and barks and leaves in India, paper in China, etc. Fabric scrolls and paper of various sizes together with vellum and parchment were used throughout the middle age for storage and transfer of knowledge.

If invention and spread of writing started the very first revolution of information and communication, Gutenberg's printing press ushered the second revolution. If the first were elitist, the second was great democratizing agent bringing knowledge to the hands of ordinary people. Storage and retrieval became much easier. But again, only the literates were able to cope up with the new technique. Person to person oral communication gradually lost its value as the principal means of knowledge distribution. Today however we are one step further; the Internet, voice mail and Chat have come to eclipse the impact of hardcopy print documents and in a sense brought back the old person to person interaction and information exchange.

Plato (1), in his work, *Phaedrus*, wrote that in the oral tradition learning was based on dialogue, while in the written tradition, the learner has little, if any, ability to converse with the knowledge creator. Enhanced knowledge often comes out of the interaction of two viewpoints. There is a Sanskrit *sloka*

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(couplet) from the thirteenth century AD, which anticipates this idea marvelously and is worth quoting. '*Dānena bardhate nityam vidyā ratnam mahā dhanam*' meaning 'learning or knowledge is great wealth which increases every time when shared'. There are many modern collections of Sanskrit versés, which include this one (2). Indeed this or its translated versions in modern Indian languages is like a well-known saying in India. Studies have shown that scientists and engineers exchange knowledge in direct proportion to the level of personal contact. This concept framed and enabled, by the use of new technologies, is today's concept of knowledge management.

Origin of knowledge management :

In the Nineteenth Century, society moved from working primarily on farms and as single artisans producing products one at a time, to working in factories, producing hundreds or thousands of copies of a product at the same time. Then came the change from land to capital. The agrarian society gradually converted into industrial society through rapid use of knowledge base in the eighteenth and nineteenth century Europe. Loose distributed feudal system was taken over by factory based compact organizational production system. A breed of all-powerful managers emerged. Instructions came only from the top management in the organizational hierarchy. The others did not have very much to say, or even to think aloud. Things changed again in the late 20th and early 21st century. Sudden importance to information came up than any thing else. A profound change occurred in the relationship between labor and capital. Knowledge, the strength of thought started replacing the strength of manual skill. A postindustrial social order leading to information and knowledge society is gaining ground and changing organizational structure and function.

Karl Marx revolutionized political and economic thought during the fifties, sixties and the seventies of the nineteenth century. He called for a world economy in which workers owned the major factors of production. Marx's dream comes true with today's knowledge workers who own the most important factor of production for the economy, the knowledge.

In 1969, Peter Drucker the management guru (3) contended that knowledge "has become the foundation of modern economy". Drucker coined the term 'knowledge worker' (4) in 1959. The knowledge worker includes programmers, systems analysts, technical writers, academic professionals, researchers, etc. The concept of Knowledge Management evolved from the academic thinking of Peter Drucker and from a management thinking perspective of Nonaka and Takeuchi in the 1990s, introducing the concept of a 'knowledge organisation'. Nicholas Henry (5) used the term "*Knowledge Management*" in 1974 for the first time. However the phrase "knowledge management", entered in the glossaries and professional jargon during 1990s. In early and mid 80's Sen and Gan discussed the issue of translating experience into information and devised a practicable procedure for such translation in statistical field survey preceding today's knowledge management. (6). Sen also conceptualized and devised such a procedure in a taxation department (7). But these were not publicized at all.

World Development Report of the World Bank noted that biggest gap between rich and poor nations relates not to capital but to "knowledge". KM

emerged to become one of the top issues of an age where consultants live on the Internet and intellectual capital provides the new competitive edge (8).

Digital Equipment Corporation and the Technology Transfer Society convened the first conference in the United States focused on knowledge entitled "Managing the Knowledge Asset into the 21st Century" at Purdue University in 1987. (9) The first conference specifically devoted to knowledge management was held in Boston in early 1993 (10).

A Missed Link :

"Push" technology (11) helps to retrieve relevant information from the net and 'push' it to the desktop of the user. It provides user defined structure to knowledge access and sharing. To receive the information one requires downloading and installing a push vendor's software. Some vendors even push their services over an Internet connection without requiring anything from the user's end. Users also define and prioritize the type of knowledge they ask for. Users fill out a profile specifying the type of information they want. The profile acts as a filter. Apparently "Push" technology is an Internet version of Selective Dissemination of Information (SDI). H P Luhn of IBM initiated the idea of SDI. If the idea of SDI was extended for inclusion of full text data and non-documentary information and presented through an intranet portal then it could have led to some sort of KM. Historical development of KM however took a completely different route.

Growth of Knowledge Management :

Senge (12) focused on the "learning organization", which is a cultural dimension of managing knowledge. Chris Argyris and Schön (13), dealt with facets of managing knowledge at the same time.

The 1980s came up with concepts as "knowledge acquisition", "knowledge engineering", "knowledge-base systems", and computer-based ontologies. Knowledge management-related articles such as organizational learning began appearing in journals like *Sloan Management Review*, *Organizational Science*, *Harvard Business Review*. At the end of the 1990s business houses started implementing 'Knowledge Management solutions'. Thus a number of KM technologies with software devices began to be developed.

By 1990, several management consulting firms (American, European and Japanese) started in-house knowledge management programs. Knowledge management was introduced in the popular press in 1991, with Thomas Stewart's publishing "Brainpower" in *Fortune* magazine (14). Ikujiro Nonaka and Hirotaka Takeuchi's (15) "The Knowledge-Creating Organisation: How Japanese Companies Create the Dynamics of Innovation" also generated large scale interest.

Development of KM ideas has not been simple, straightforward and linear. Many different lines of approach came up. Data processing ideas and techniques which evolved along with computer technology was one of them. This started immediately after the Second World War and culminated in the turn of the 21st century. Porat (16), Machlup (17) and others started studying economics of information in the 1960's. The term 'knowledge industry' was coined to emphasise the role of information and knowledge in industry and economy. A number of authors in sociology, policy studies, management and futurology started in 1970's to look at the cultural trends or cultural evolution

from the point of view of utilizing manpower, energy, materials and knowledge. Daniel Bell talked about pre industrial, industrial and post industrial society. Toffler, Schumacher, Garfield and others talked about information society and knowledge society, which are components of the post industrial society. This societal conceptualization took place in the 60's and 70's of the 20th century.

In the 80's and 90's thoughts about information or knowledge assets, intellectual capital etc., were conceptualized in the globalising environment of business and organizational management. Data processing and information processing technologies had such a rapid and omni potential growth that there was a thought that through application of such information technology only, organizational competence and competitive edge can be optimized. Marriage of information and communication in the so-called Internet revolution was first seen as a boon to all types of innovative processes, business, administration, organizational and project management. Indeed because of the advent of networking and huge storage servers and very high speed of data processing, it was almost taken for granted that technology would automatically take care of management. This was a reason that the fadism and enthusiasm for KM waned in the 90's.

Knowledge management in the 21st Century :

The interest in real, concrete KM has been regenerated in the beginning years of the 21st century. Technology of data processing, data organisation, data transfer concepts of knowledge processing and knowledge management developed parallelly. It had to be realized that the value of human beings as source of knowledge and processor of knowledge has remained almost the same and is beyond the scope of straightforward information technology. Therefore the present day KM has to be looked as a holistic combination of interacting and utilizing of human knowledge sources, virtual and real information sources and data processing and dissemination technologies. KM can now be set in the perspective of a broad spectrum of management and utilization of data to wisdom. It is now observed that organisations have finally been able to separate cultural aspects from technological solutions and by middle of the first decade of the century principle of KM may well be embedded as standard organizational good practices.

Gerry McGovern (18) pointed out the reasons of failures of early KM efforts in the early 1980's. Some of them are as follows:

1. Organisations were trying to implement KM solution with KM technologies without proper examination of situations.
2. At the first instance there was much hype with consultants and technology vendors marketing KM tools. Implementation of such tools without proper examination and assessment of purpose and effectiveness made KM system break down.
3. Too much money was spent with little or no return generating a frustration at the inability to translate the theory into practice. There was lack of incentive. Employees could not understand the value of KM and were not the appropriate ones to make it effective.
4. People and particularly experts were not encouraged to share knowledge as they received very little new knowledge from the process.

5. The focus was on the technology rather than organisation and its people. A McKinsey survey of 40 companies in Europe, Japan and the USA showed many executives thought KM would mean building sophisticated IT systems.

Theorizing Perspective :

According to Prusak (19) there are categories of intellectual antecedent disciplines that helped shape the concept and practice of KM. The first range of such traditional subjects comprises economics, philosophy, sociology, and psychology. In the second category are practices of information management, quality management and quality assurance. The third category deals with various aspects of human resource mobilization.

Prusak also tried to show that KM was no longer considered as a fad but a business survival technique. He mentioned a BSI report on UK organisations that found 80% of large UK organisations already engaged KM by 2000 and many others were to follow suit. He mentioned also a 'Price Water House Coopers' report that "75% of a company's worth may soon reside in its Intellectual property."

Certain attitudes, principles and practices that were apparent or discernible in the academic and R & D situations invaded the business firms in the late 1990's. Bonitz observed that a new research work (discovery or invention represented by a research paper or a patent) would be required to reach all points of potential users or consumers and in optimally minimum time. That is a sort of global and multidimensional spreading of new ideas. This may be taken as happening with the developments like KM. On the other hand constant accumulation of knowledge and explosion of information and global spread would need tracking, selection and cumulation through content assessment and reengineering of information. The role of a technological gatekeeper (a gatekeeper scientist) in keeping information about latest developments relevant to an R & D team and making them known to the members of the team was well recognized for a long time. All these when acknowledged in business environments and developed into a conceptual framework for actual practice (without recognising these predeceasing ideas and activities in academic environment) led to what we know as KM today. A knowledge Manager has to play a role similar to a gatekeeper. It should also be recognized that since the time of industrial revolution and spreading of trade over the continents many thinkers, business organizers and others have talked about consolidating knowledge and using them for the benefit of production, trade and business.

Globalisation :

KM has not so far been globalised. But both can affect each other. Because of globalisation and highly efficient global communication systems all types of business firms (and even the service organisations like educational institutions, hospital services, medical services etc.) face keen competitions. It was recognized early that an edge over competition could only be achieved by appropriate, adequate and intelligent use of information. Almost coincidentally tools for information reengineering became available through computer hardware and software. Even then it took time for KM to become an established and acknowledged active organisational support process.

The reason is, it required sometime to realize that people are most important factor in the process as contributor, as learner, as assimilator, and as processing agent for knowledge and information. It was also recognized that tacit, inarticulate and hidden experience and knowledge are more important than available explicit information. Thus although many linkages can be traced to many different ways and means of learning and utilization of knowledge throughout the history as already discussed above, KM as a well defined system of technology and management combined together is a phenomenon of post industrial (information technology) era.

A debate has started as to the relevance and effect of transporting KM systems and strategies from the developed countries to the developing countries in the wake of globalisation. To a point globalisation does have a devastating effect on the developing countries especially the poor in the developing countries, where access to Internet and cost of modern technologies are still out of reach. But then it can well be expected that proper Knowledge Management will enrich the poor or it can be a good force to enrich the poor.

Generations of Knowledge Management :

Ingie Hovland (20) has mentioned about two generations of development of KM. We can also think of a third generation which is the most recent and is still in the process of stabilizing. Based on a few tips from Holland on first two generations—a descriptive scheme of the three generations prepared by us is presented here.

First Generation

1. Aimed at corporate Business Firms
2. Organisational learning
3. KM as solution for Information Age challenges in corporate environment
4. Recognition of knowledge and information as core organizational asset
5. Knowledge/information sharing within organisation
6. IT and system development or system adoption for codifying existing knowledge and processing information
7. Management based on compliance

Second Generation

1. Applied to diverse types of organisations
2. Generation of new knowledge not only processing of existing knowledge
3. KM as a tool for characteristic crucial edge effect over competitors
4. Shift from 'prediction' to 'anticipation' (of surprises) strategies based on 'KM'
5. Shift from technology (IT) bias to process
6. Management based on self control and self organisation

Third Generation

1. Applied to any type of organisation at least in concept and principle, if not in practice or possible application

2. Holistic approach
3. Exploration of possible KM development in third world environment—taking KM from 'north' or 'western' or 'developed' scenario of sophisticated organisation to more loose scenario of 'south' or third world systems
4. Recognition of 'individuality' that is separate KM strategy and KM tools for each organisation or at least each type of organisation
5. Foremost emphasis on 'people'
6. Information from all types of sources
7. Specialised and skilled KM team—training for KM
8. Instead of short term project oriented KM activities to long term mission (oriented) activities and strategies as well
9. KM in the backdrop of globalisation

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Abstract :

This article is an in-depth analysis of Knowledge Management (KM). It describes the history, development, origin, growth and generations of Knowledge Management (KM) clearly.

VIDYANIDHI OF MYSORE UNIVERSITY: AN APPROACH TO DIGITAL INFORMATION SERVICES FOR RESEARCH SCHOLARS

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Introduction :

"Educate, emulate and empower" are the stems of human development in a developing country like India. Higher education, in the ever-growing knowledge society, is facing new challenges, not only in producing quality man power but also scholars of excellence. Institutions of higher learning are the backbone of modern Industrial Society. The effective initial steps taken by the founder of Indian higher education system have helped us today to pave the way for future generations. Several Universities in India are importing education from some of the reputed Universities in the world. Every grown up University has its own memorable hallmarks and milestones.

The University of Mysore was established in the year 1916 on 27th July. Mysore University was established by Maharaja Sri Krishnaraja Wadiyar Bahadur IV. According to foundation, it was the sixth in this country and first in the Princely state University in India. It was Sir M. Visvesvaraya, the far sighted Dewan of Mysore, who was instrumental in executing various schemes for the all-round development of the state, promoted the popular idea of a University for Mysore and gave it a concrete shape. The University of Mysore started with two colleges-the Maharaja's College, Mysore and the Central College, Bangalore. Around 1916-17, two other colleges, namely, the Maharani's College, Mysore and Engineering College, Bangalore were founded.

The motto of the University, as envisaged in its emblem is "Nothing is comparable to knowledge". The second motto states, "I always uphold the truth". It was referred to as "the first University to be founded by an Indian ruler for the benefit of his people" by Annie Basant by her convocation address in 1924.

It has been the rich tradition of the University to encourage assimilation of knowledge from all walks of life. The Poet laureate Vice-Chancellor Dr. K. V. Puttappa christened the nascent campus as Manasgangothri meaning Fountain head of knowledge. The University of Mysore from time to time, has undertaken measures and initiatives to enhance and ensure quality in teaching, research and administration.

Vidyanidhi is an initiative that began as a Pilot Project in the year 2000 to demonstrate the feasibility of electronic theses & Dissertations (ETDs) in the Indian context. Vidyanidhi Pilot project was sponsored by NISSAT, DSIR, Government of India. Vidyanidhi is now expanding and enlarging its horizon from a pilot to a programme with support from the Ford Foundation and

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- * Microsoft Corporation. Vidyanidhi is a portal and an initiative that will help make this pedagogic journey very exciting and rich with its facilities, resources and tools. Vidyanidhi is envisioned as an initiative to build research capacities of Indian Universities through its activities and portal. Vidyanidhi is an initiative to open up that treasure of knowledge the doctoral theses.

Objectives of the study :

- i) To discuss about the visions and missions of the Vidyanidhi project
- ii) To find out the services rendered by the Vidyanidhi project
- iii) To depict a picture on the relationship between the objectives and the services rendered by the Vidyanidhi project.

Methodology :

The methodology was based on the observation as well as interaction with the staff engaged in the Vidyanidhi project. This study was done by the authors in the Month of April 2005 as a part of academic programme of M Phil course in Library & Information Science, University of Calcutta.

Mysore University :

Geographical Jurisdiction

Very beginning the territorial jurisdiction of the University covered all the nine districts of the Southern Karnataka state. However, over the period of light decades several changes have occurred in the jurisdiction of the University. With the carving out of Bangalore University in 1964, Mangalore University in 1980 and Kuvempu University in 1987 from the territorial jurisdiction of the University of Mysore the activities are confined to the four southern districts of Mysore, Mandya, Hassan and Chamarajanagar. The medical and dental colleges in these districts have come under the Rajib Gandhi University of Health Sciences (1996) and the Engineering Colleges under Sir M Visvesvaraya Technological University (1908). The distance education unit of the University branched out to form the Karnataka State Open University, in the year 1996.

Academic Programs and Campus :

The University of Mysore offers academic programs in the faculties of Arts, Commerce, Education, law, Science and Technology. The University's undergraduate programs are offered in as many as five constituent Colleges and 138 affiliated Colleges spread over the four districts. The main post-graduate departments offering nearly 55 programs. Besides a host of job oriented diploma and Certificate courses are also offered. The University has to its credit the introduction of five year integrated courses in Physics, Chemistry and Molecular Biology.

Chairs :

It has been the rich tradition of the University to encourage assimilation of knowledge from all walks of life. It has sincerely believed that the boundaries of knowledge never confined to individuals, institutions and certainly never to the classrooms. Therefore, the University has always willingly provided opportunities to people with experience, ideologues and knowledgeable persons

a platform to put forth their views before the academicians and the students. It is with this purpose of furthering academic excellence that the University established endowment chairs and Lecture Series, during this period. This was supported by a good number of cherished donors.

The following are the various chairs Instituted in the University since 1963:

1. Sir M. Vishvesvaraya Chair (June 1963)
2. Sri Krishnaraja Wodeyar Chair (October 1980)
3. Sri Gubbi Veeranna Chair (May 1986)
4. Kuvempu Chair (September 1987)
5. Diocesan Chair in Christianity (March 1988)
6. D Devaraj Urs Chair (September 1990)
7. Dr. B. R. Ambedkar Chair (October 1994)
8. Swami Vivekananda Chair (October 1994)
9. Dr. Zakir Hussain Chair (October 1994)
10. State Bank Mysore Chair (1998)
11. Babu Jagjiban Ram Chair (2001)
12. Planning Commission Chair (2004)
13. Tippu Sultan Chair (2004)

University Library & Network :

The University main library has a resource collection of 8,00,000 documents, which include precious archival and rare reference materials, more than 6,00,000 books, nearly 75,000 bound volume of journals and also subscribes to 2000 journals. Access to online journals is available through UGC-INFLIBNET and JSTOR.

The Department of Studies in Library & Information Studies, Mysore University :

The Department of Studies in Library and Information Science, established on June 24, 1965 has steadily grown from strength to strength in respect of faculty and teaching programmes. Today, the Department is leading the country in LIS education and has made a strong presence in the profession through its innovative teaching programmes and sponsored Research Projects. The courses offered reflect the changing dimensions of the field. The curricula reflect the commitment to change, innovate and adapt. Courses are geared towards imparting knowledge and skill sets requisite for the emerging information society and preparing the next generation of information professionals.

Strength of the Department :

- Curriculum innovations
- Sponsored Projects
- Organizing Seminars/Workshops
- Research and Development Efforts
- Consultancy

Academic Programs of the Department

Master of Library and Information Science M.L.I.Sc.

- A two year (four semester) Integrated Programme
- With a strong emphasis on IT centric techniques and enabled service

Master of Information Management MIM

- A unique innovative inter-disciplinary programme
- Expanding the scope and horizon of information profession
- Intended to produce Information Managers for the Networked Digital Age
- Government of Karnataka recognized the Mysore University for innovative programmes in Information and Management

Doctoral Research Programmes Ph.D.

Vidyanidhi

Vision

1. To evolve as a nation repository and a collaborative consortium of participating University and academic Institution.
2. To evolve as an online resource and a technical mechanism for creation, submission, archiving and accessing of Indian Theses.

Upto April 2005, 10 (Ten) Universities and Research Institutes have participated the consortium programme of Vidyanidhi. These are:-

- a. University of Kashmir
- b. Jamia Malia Islamia
- c. University of Delhi
- d. Jawaharlal Nehru University
- e. Bangalore University
- f. University of Madras
- g. Aligrah Muslim University
- h. PRI
- i. NASSDOC
- j. Jadavpur University

Mission

1. Archive and improve access to doctoral theses in India.
2. Make theses available online (as per the restriction desired by Doctoral students) and help enhance the visibility of India Doctoral Research.
3. Offer tools and resources to strengthen and augment the research capacities of doctoral Students and Universities.
4. Enhance the quality of doctoral research in India by prompting and using standard formats and templates.
5. Mould 'Best Practices' in scholarship and scholarly writing.
6. Prepare doctoral students in e-publishing, e-scholarship and digital libraries by offering training programmes online tutorials.

Different services :

- i. Digitization of the theses collection of the participating Universities.
- ii. Building a database of the theses collection of participating Universities.
- iii. Install depositing software for online submission of theses
- iv. Ref. works—a Reference Manager software for managing references / bibliographies-making it easy to build bibliographic database.
- v. Template and style sheets for creating theses in a standard format.
- vi. Outline tutorials.

Different access points

- i. View only (on downloads)
- ii. Preview Table of contents 24 Pages only.
- iii. Pay and download (the royalties to be shared by Vidyanidhi and the participating University).
- iv. Free download
 - a. World wide distribution
 - b. Vidyanidhi Consortium only option
 - c. My University only option
 - d. Restricted access

Why different Universities/Institutes should join Vidyanidhi?

- a. By joining Vidyanidhi Universities / researchers will be part of an emerging e-theses movement in India.
- b. Catalogue of the different University theses collection will be integrated with the Vidyanidhi theses database.
- c. The doctoral research works of different University / institute will reach a global audience and have high visibility.
- d. Increased access will enhance readership, thus increasing the citations received and better visibility to the doctoral researchers.
- e. Open access publishing e-theses is a part and the first step, will user in better quality control.
- f. Vidyanidhi tools and services are a boon to the academic community.

Present Scenario of Vidyanidhi :

At present the database consists of 85,000 bibliographic records of the theses of which only 200 have the full text. 2660 bibliographic record of the dissertations and theses of the University of Calcutta was present in the Vidyanidhi database without the full text of the original. Only 24 theses database along with the full text of the Jadavpur University is available.

Vidyanidhi database is a multilingual database - a successful implementation of Unicode for Indian languages. They incorporate Kannada theses in Kanada language and Hindi theses in Hindi language. Now 415 Hindi theses is available along with their bibliographic records only. They are willing to expand their database with other Indian languages also.

Conclusion :

The Vidyanidhi project undertaken by Mysore University is nodoubt a praiseworthy programme because a scholar can access all the theses in his/her discipline at a glance staying at his/her own place. Till the date of visit, the Vidyanidhi can not attain a commandable position due to insufficient number of full text theses there in. The mission of the Vidyanidhi project will be successful if all the Universities and the Research institutes extend their hands of cooperation and provide their bibliographic database along with full text of the theses to the portal. The aspect of Intellectual Property Right is not properly reflected in the Vidyanidhi project. As there is no clear cut policy regarding the right of the researcher in respect to the exposition of their works in the portal, the degree conferring authorities are not in a position to give permission of publication of full text database in the Vidyanidhi project.

Acknowledgement :

We are thankful to our beloved teacher Dr. Biplab Chakrabarti, Reader, DLIS and also the Co-ordinator of the M Phil Course in Library & Information Science, University of Calcutta for providing continuous inspiration for preparing this write up.

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Abstract :

This study depicts a picture about the Vidyanidhi Project of Mysore University. It describes the mission and vision of the Vidyanidhi Project. There is also a brief explanation about the present state of the project and causes of joining (in the project) of various Universities and Institutions.

CENTRAL INSTITUTE OF INDIAN LANGUAGES LIBRARY: A STATE OF THE ART REPORT

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Introduction :

The library and information centres are now changing their operational units from traditional methods to electronic devices. It is needless to mention further, the application of Computer and communication Technology has proved to be successful in large library and Information centre by storing and sharing of data, retrieval of information. etc. Thus the modern technological devices like Internet, intranet also extranet have become the indispensable organ in the modern and technologically equipped libraries & Information Centres during this century.

The Central Institute of Indian Languages was set up on 17th July 1969 with a view to assist and co-ordinate the development of Indian Languages and its library is a premier research multimedia second digital library specialised in Indian languages, linguistics and related areas. Formerly started in april 1970, the library is well equipped with all the modern facilities and information resources from print/non-print to electronic resources.

CIL Library :

The primary mission of the library is to provide pin point exhaustive Information services and access to bibliographic and full text digital/printed resources to support the linguists in their academic and research work in India/abroad. The ambitious plan of the library is to make the CIL library as a "National Information Centre for Linguistics and Indian Languages".

The library moved to its own premises in August 1995 and housed in an independent wing of three floors namely upper, middle and lower floor. The total carpet area of the library is 1620 square metres, and each floor measuring 540 sq. mts. The main entrance of the library is the middle floor. This floor has accommodated the reference section, browsing section, circulation and information desk, display of new arrivals, OPAC section and the staff section. The upper floor is the library's pride possession of the professional journals housed with current and back volumes. The lower floor, which is the backbone of the library, has accommodated the main collection of linguistics, Indian languages and related areas.

Objectives :

The main objective of the Library is to provide information support to the staff of the Institute in their academic and research pursuits. It caters to the needs of linguists and language specialists of the institute and also scholars from various parts of the country and abroad.

* Librarian and also Ex-Student, DLIS, CU

** Librarian and also Ex-Student, DLIS, CU

- Provide information resources to Central as well as State Governments in the matter of language.
- Caters to the needs of scholars with the latest development of all Indian languages by creating content and corpus.
- Protects and preserve document specially, minority and Tribal languages.
- Provide linguists and language specialist's sufficient information services to promotes Linguistic harmony by teaching 15 Indian languages to non-native learners.

Library Holdings :

The library built the empire of comprehensive information resources over the period of 34 years acquiring reference materials, special information resources, valuable documents in linguistics and allied areas. The vast reservoir of information material of the CIIL Library is worth Rs. 3 core (1970-2004).

The library collection comprises print and electronic resources. The print/non-print resources include books and journals. The electronic resources include E-journals, microfiche, microfilms, slides and gramophone records, tapes cassette tapes, and compact discs. The library also has a rich collection of manuscript information resources, which includes thesis, dissertations, and papers presented by individuals during conference, seminars and workshops. Besides, it also has maps, which are restricted and unrestricted map, photographs and charts on the development of Indian scripts and writings.

The total book collection is 80,000 and receives 300 journals, with 30,000 back volumes on the shelf. Important professional journal in linguistics could build up its core collection in linguistics and Indian language studies.

Classification of Information Resources :

MACRODOCUMENT :

Print Resources :

- Books 80,000
- Periodicals
 - Journals 300
 - Back volumes 30,000
 - Reprints/Off prints

MICRODOCUMENTS :

- Microfiche 12,700
- Microfilms 406
- Cassette tapes 209
- Colour Film Strips 47
- Slides 02

AUDIO/VISUAL :

- Cassette tapes 209
- Gramophone records 09
- Video

ELECTRONIC RESOURCES :

E-Journals: EBSCO Database.

In the year (2001) the library subscribed the Electronic journals, through EBSCO information services group, New Delhi, which provides access to its data bases namely 'Academic Search Premier' and 'Academic search Elite'. This enable the users to access the full text articles for 2,800 journals and abstracts and index for 2,647. Covering seven databases which covers 7,000 Journals.

- E-book.
- CD's- 150

Non-Print Resources :

- Photographs on Development / Story of Indian Scripts/Writing
- Maps (includes general, restricted and non restricted maps) 2835
- Theses and dissertations in linguistics from university of microfilm, Michigan.

Other Resources :

CILIL Manuscripts :

- Conferences, seminars, individual papers
- Theses and projects, reports

Special Information Resources :

Besides linguistics and languages, the library has maintained special information resources as follows:

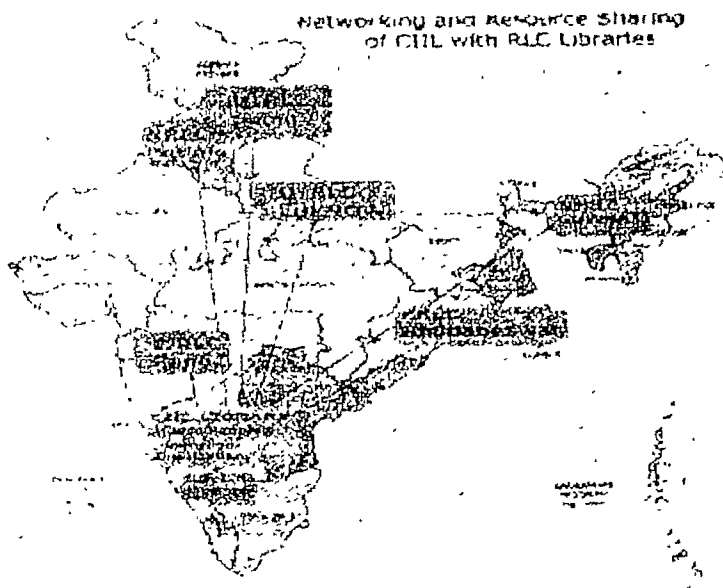
- Census reports and Imperial gazetteers from 1872 to 1951 in microfiche and from 1961 onwards available in print form.
- Dictionaries, encyclopaedias, language dictionaries in various Indian languages.
- Language textbooks for standard I to X in all major Indian languages (taught in various states) and also in foreign languages.
- College level textbooks published by various Granth Academics on various subjects in major Indian languages.
- Indian literature in translation.
- Children's literature in all major Indian languages and in English.
- Adult education and literacy primer's.
- Reprints of rare documents, photographs, maps i.e. restricted and unrestricted, charts.

Regional language centre's libraries :

The library is one of the leading digital libraries in India with its precious collections in the area of linguistics and Indian languages and related fields. The Central library, Mysore, has its seven regional language library located at Mysore, Pune, Solan, Patiala, Bhubaneswar, Lucknow and Guwahati.

The total collection of books of all the R L C's is 1,04,000 books.

All the centres are getting around 50 periodicals related to their original languages. The users depend upon the number of teacher trainees each year. For example, SRLC has 133 trainees during the present academic year 2004-05 in addition to regular staff and visitors. Services such as newspaper clipping, references are regular in all the centres. As the library hour is in the timetable for teacher trainees, all the centre libraries are functional libraries in nature



Library Computerisation :

The Library in August 2003 initiated its automation work of CIIL and Regional language centres with a compatible international software i.e. VTLS Software, Virginia, USA. The speciality of the VTLS software is that it supports all the Indian languages. A network resource sharing will be created for the CIIL and the RLC Libraries soon after the retro conversion work is over.

The Library has Computer Facility :

Two Compaq computers with LAN connection

Compac Deskpro, Pentium-3/866 MHZ, 64 MB RAM, 20 GB HD, 1.44 MPFD, 2 serial, one parallel, 2USB and one game port with multimedia.

One HCL Computer :

HCL celeron/466 MHZ, 8GB HD, 1.44 MBFD, 2 serial, one parallel, 2USB ports, 48x CD drive, on board sound card.

15 terminals are being installed exclusively for accessing E-journals. It also has a photocopying machine to help the users.

Information Services :

- Preparation of 'New Arrivals' every fortnightly through Intranet.
- Online Public Access Catalogue-VTLS portal
- Current Awareness Service of Periodicals updated daily through Intranet.

- Compilation of Bibliographics prepared in connection of seminars, workshop, conference and on special request by any scholar for their research purposes.
- Reference/Referral services
- Inter library loan services
- Xerox service
- Arranging book exhibitions
- Newspaper Clipping Service

In recent years importance has been given by the Govt. of India to the study and development of Indian languages. As a result, there has been a constant flow of new items on language issues. To keep abreast of the Govt. plans, its policies regarding language, education, folklore and other related fields, it has become necessary for the library to collect and preserve the new clippings in the areas such as language use in education, administration and mass media, linguistics minorities, information on scripts, tribes and tribal languages, education, language planning, language and political issues and folklore. The library has been collecting such clippings since 1975 from newspapers 'Deccan Herald', 'Hindustan Times', 'Indian Express', 'The Hindu', 'The Times of India' and 'Prajavani (Kannada)'. The clipping archives have about 12,000 news items at present.

● **Library service, consultation to scholars from other Institution**

The Library maintains a comprehensive collection on various aspects of linguistics and latest publications are acquired in a systematic manner. Besides, the Central Institute of Indian Languages library is the only one of its kind where a wide range of information resources in linguistics and Indian languages are available in one place in the entire country. Its unique collection has attracted scholars from different parts of the country, who make use of these resources in their academic and research pursuits. The library has been providing access to its resources to the interested scholars for short periods.

● **Consultancy services To RLC libraries of the Institution**

The Central Institute of Indian Languages library being in a leading position provides guidance and support and offers suggestions for improvement to the Regional Language Centre libraries of the Institute, situated in different parts of the country in library related activities.

Conclusion :

CIIL library has taken gigantic as well as challenging assignment to achieve a deserving goal for their clients. The professionals are working with this project was a very motivated and painstaking nature. Within a very small span of time they achieve a costly software and hardware to encounter the entire process of house keeping operations very conveniently and user friendly. But there are several things that could have been done to improve and fulfill ultimate goal of the library. These are creation of National Data base for linguistics of Indian languages and development of library as National Information Centre for linguistics of Indian languages.

Acknowledgment :

We are thankful to Smt. Sharada, In-Charge of the digital library project, CIIL, Mysore who provided a lot of information to us for preparing this write-up.

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Abstract :

This article gives a detailed analysis about the library of the Central Institute of Indian Languages (CIIL), Mysore. The main stress of this article is on the holdings and services of the library of the CIIL, Mysore.

ARTIFICIAL INTELLIGENCE IN LIBRARY AND INFORMATION SCIENCE

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1. Introduction :

Library services are being sophisticated day by day. With the fast achievements of Information technology we are in the era where man needs machines having intelligence.

So, Artificial Intelligence in Library and Information science is an essential aspect

Now, the question is what is Artificial Intelligence? According to Marvin Minsky

"Artificial Intelligence is the science of making machines do things that would normally require intelligence if done by human". or,

According to Patterson, Artificial Intelligence is "concerned with the study and creation of computer systems that exhibit some form of intelligent systems that can learn new concepts and tasks, systems that can reason and draw useful conclusions about the world around us, systems that can understand a natural language, perceive and comprehend a visual scene and systems that perform other types of feats that require human types of intelligence."

High performance computing (HPC) is possible by the advent of parallel super-computers having high storage capacity and very fast computing speed, about 100 million operations per second! Super-computers contain as number of CPU which operate in parallel to make it faster. Superconductor technology allows the flow of electricity with little or no resistance.

Artificial Intelligence (AI) is a feature of fifth generation computers.

Massive amount of information are currently being generated. The data are so rich in the repositories—a database ten orders of magnitude greater than any currently existing, in future will require "mining" for information relevant to a problem has become and will become a difficult and time consuming process. Therefore, reaching a goal through this vastly expanding information space will eventually become impossible without some sort of "intelligent" guidance. So, the AI machines must have the abilities to reason, ability to learn, or acquire knowledge, and also the abilities like perception, creation and innovation. AI is a highly interdisciplinary area using logic, linguistics, cybernetics, information theory, psychology etc.

AI therefore Includes :

- * Expert Systems i.e. computers offering advice on complicated rules for varied situations.
- * Natural Language Processing (NLP), Voice or speech recognition i.e. computers communicating with users in human languages either by using the keys or through direct speaking with the computer.

* Student, MLIS (2005-2006).

- * Pattern recognition or vision
- * Robotics.

2. Expert Systems

A major area of Artificial Intelligence which has much concern with library and Information science applications is Expert Systems.

Expert systems are also called knowledge based systems or intelligent systems to perform in a manner similar to human expert in a specific domain of expertise. This area of AI thus offers lots of promise to library and information science professionals.

One of the major projects in library and Information science is 'PLEXUS' under the leadership of B. C. Vickery. 'PLEXUS' is the expert system for referral information processing. An intelligent interface for an information retrieval system aims to control an information retrieval system, interacting directly with the user and allowing him to retrieve relevant information without any human intermediary. Development of information retrieval interface is a difficult task.

Expert systems are computer programs that attempt not merely to store the knowledge by human expert but also reproduce the structure of that knowledge; the expert employs certain processes of reasoning, judgement and even the intuition he brings to a particular problem is employed by the expert systems.

Much progress with expert systems is due to the fact that they deal with information that has been already organised into format, abstract systems and can be handled by programs which have no knowledge or experience of the 'real world' factors on which the abstract structure of expertise was originally based.

Two fundamental points in construction of expert systems are :

The information provided by the human experts i.e. the programs knowledge base must be provided in a form to allow statements to be related to each other in terms of the implications which each holds for the other. Technically such relationships can be formulated in a logical system known as predicate calculus. PROLOG, the computer language allows the information to be communicated to machine in a form which translates directly into predicate calculus, PROLOG is invented by researchers at the university of Marscilles.

Unlike most computer programs knowledge base, the part of program containing data is separate from which controls the manipulation of data.

Designing an expert system require knowledge acquisition and knowledge representations. So relevant domain of knowledge is to be identified and encoding it is also important for use of a computer. The knowledge engineer must have the knowledge of proper interviewing of people, translate the information into a computer representation after interpreting what he hears, so chosing appropriate representation and control mechanism is a must.

Knowledge representation techniques include first order logic, frame and semantic networks, so how knowledge is represented that computer can access when needed is a bottleneck.

Another bottleneck being VLKB's or very large knowledge bases which are necessary to many applications to solve larger problems that require quick

access to numerous facts—motivated by the exponential growth of the information resources as well as the growing information necessity of society.

Also expert systems have no capability of correcting errors or mending any omissions. Still inspite of lacunaes, expert systems are identified as aids to decision making or assisting, where human expertise is at crisis being required at several places at a time or is expensive. Human experts may commit mistakes or get tired. Expert systems can work 24 hrs a day even in extreme environmental situations.

The Information Digital Video library project is a research initiative at Carnegie Mellon University funded by the NSF, DARPA, NASA and others that studies how multimedia digital libraries can be established and used. Intelligent, automatic mechanisms are being developed to populate the library. Research in the areas of speech recognition, image understanding and natural language processing supports the automatic preparation of diverse media for full content and knowledge based search and retrieval.

3. Natural Language Processing

Natural Language Processing (NLP) is the capability of processing natural language or the language used normally by human beings during their interactions by a computer when one interacts with a computer. AI scientists have succeeded in building natural language interfaces to a large extent using limited vocabulary and syntax.

So, NLP is another important area of AI concerned with library and information science.

Developing Natural language interface to bibliographic database systems is the present field of research in the application of Natural language processing techniques in library and information science.

In substituting the library professional intermediary in translating user queries into system query, NLP techniques have also been used. Information retrieval—natural language interface provides technical users with a natural language interface to the information services offered by online databases. The system decides the appropriate one for answering the users request.

4. Robotics

The most interesting and promising area for AI application in libraries is Robotics Fig.-1.

Beyond the second generation robots, the third generation robots have been given artificial intelligence. In fact the 1st generation robots are only robo arms working on factory floors and the second generation robots have got no AI but work on sensors and feedback which may be wheeled robots or walking robots working in necessary zones of operation. AI will require a machine to recognise all sorts of pattern besides visual images, recognition of voice and perception of obstacles. Sensors represent the senses of a robot such as vision, touch and hearing etc. The tactile sense can be given to a machine by the most simple way as touch switch or limit switch representing the limit of travel of an arm. The touch of the gripper requires different pressures to be exerted if it is holding hard or soft object (Fig.-2). The sensors on the end of a gripper claw enables the robot to know how tightly it is holding an object, the feedback of signals and information

about the pressure that the gripper is exerting enables the computer to increase or decrease the pressure of its grip. So the AI mechanics and techniques for coping with large no. of calculations is very complex.

5. Pattern Recognition :

To recognise patterns is an important feature of AI. Optical Character recognition also falls under pattern recognition which minimises the efforts of bibliographic data entry. OCR softwares like OMNIPAGE and TOPSCAN can run on PCs.

Making books readable on computer proves trying task. According to Michelle Kessler, [USA Today (December 15, 2004), "Its not very easy to teach a computer to read. Turning paper books into searchable digital files requires artificial intelligence. Its tough for computers to pick up on visual clues that humans use when they read a book. Think about it : In many type fonts, the number '1' and lower-case better 'l' are identical. How can a computer figure out the difference? Scientist have worked on the problem for more than 20 years. They are making big strides, but the results' are imperfect... Special software called optical character recognition (OCR), allows computers to look at a picture and pick out words."

6. Neural Net :

An important aspect of AI is the Neural net technology which resembles the network of nerve cells or nervous of human brain. (Fig.-3) Neural net research could lead to generation of machines faster than today's computer capable of Interpreting speech, vision and data. Federico Fagging and Carver Mead started a company called Synaptics in San Jose California for devising a new type of chip for neural computers that can act as electronic eyes and ears by using neuron like arrays of tiny silicon sensors. The electronic retina can capture a moving image of a face and can perform billion of operations per second. Neural net technology will be cheaper-a piece of software that will run on PC also.

Thus cognitive bots are software robots capable of learning, making decisions and responding to people. Reading stories to children will be included into ability of a new generation bot.

Developments in Robotics is mating not only 'intelligent' machines but 'humans' without flesh & blood. In world Expo 2005, in Aichi, Japan 'Actroid' was an information booth worker looking like a Japanese woman capable of understanding 40000 phrases of human speech in languages like Chinese, Japanese, Korean and English. According to a group of robotics researchers at University Jaume I Spain is working on a robot librarian who could deliver the promise of a helpful bot. The prototype has cameras, sensors and grippers so it can locate and collect a book. The hope is that one day team service robots could work in libraries. Because the database will give an approximate location, the robot will navigate its way to the bookshelf, using its 'infrared and laser guidance system, and scan books within a four metre radius. 'Once it is in there, it starts using its cameras. By moving the arm with the cameras, It takes an image of the bookshelf. It can read the labels and the position of the book using its image processing and optical character recognition software.

Judhijit Bhattacharjee opines in The New York Times; June 27, 2002. "In libraries of the future, researches at John Hopkins University say, that kind of grunt work could be handled by robotic systems linked to internet. As the first step towards building such a system, the researchers have designed a robot that can move about inside a library and locate a book requested by a user, take it off the shelf and carry it to a nearby scanning station. In the system's envisaged final version, a second robot at the scanning station would scan specific pages of the book that the user was interested in. The user would scan specific pages of the book that the user was interested in. The user would then be able to leaf through the book over the internet from any location... Robots are already being used in handful of libraries around the world"...A robotic system manufactured by ABB, a Finnish automation company and installed at a municipal library in Vaasa, Finland.

In India research in robotics is not lagging behind at the centre for Robotics and Mechatronics at IIT Kanpur, a robot is being developed which can recognise human faces - A prototype robot having face recognition system using AI, though not able to recognise faces at different orientations. For intrusion detection or as a replacement of Close circuit Television (CCTV) cameras the robot can find applications in mobile surveillance. PARI (Precision Automation and Robotics India) is working extensively in Robotics.

7. Scope of A.I. :

a) Services to the Public:

AI programs can provide instructions to the users in using library resources, services and applications. These help in

*** Mediation between searcher and information:**

- Assistance with database and internet site selection.
- Based on users queries from internet, online databases as corporate data warehouses, automated searching and retrieval of information.
- Interpretation of search results and sorting.
- Assistance with query structuring or matching terms to controlled vocabularies, subheadings and thesaurus terms.

*** Automated reference :**

- Reference service for all-hours.
- Provide service to unprivileged or distant library users or users having physical ailments or are unwilling to approach a librarian in person.
- Provide automated, context sensitive creation and presentation of frequently asked reference questions.

b) Technical services :

Technical service tasks could be accomplished by AI programs in libraries.

*** Indexing and Abstracting:**

By automated matching to thesaurus or controlled vocabulary assign index terms and abstracting by key sentence identification.

*** Automated serials processing such as :**

- For acquisitions recommending titles.
- On changes or ceasure of titles updating the database.

- * Circulation
 - Processing renewals.
 - generating notices (overdue)
 - generation of circulation statistics and reports.
- * Interlibrary Loan :
 - Best source identification for requested documents.
 - routing document request to source.
 - archiving closed requests
 - generation of document delivery statistics report.
- * Acquisition :
 - Automation of copy cataloguing (able to handle diverse formats)
 - Advisory function such as ensuring rule compliance, eliminating duplicates, identification of main entry term for human cataloguing.
 - Acquisition recommendations based on institution size & type, history of purchases and rejections, reviews, budget etc.

8. Conclusions :

AI has immense application in library and information science field.

If we analyse finally, the human issues must be considered.

- How well an intelligent system fits into the existing system?
- The users are trying or will try to abandon it?
- Trust of the users on the system-whether they believe in the output?
- Does the implementation lead to loss of richness of library experience?

Similarly, the performance issues must be considered as well.

We have to make best use of existing and emerging technologies. The technologies should not replace librarians but a collaboration with intelligent systems is needed. The task being to identify the aspects of the library work to be handed over to machines and which to be retained for a librarians' new role. For these reasons, librarians must familiarise themselves.

Intelligent systems in libraries tend to grasp the knowledge of library experts and then apply. So knowledge representation and isolation of expert domains are problems complex enough to be solved. Supporting more complex task should be looked for by extending the existing capabilities.

However synergy between library professional and AI community is critical. Researches are going on to give fruitful results. Increasing number of programs containing AI techniques are getting cheaper. Expert system, pattern recognition and perception programs are being available.

Thus it can be concluded that application of Artificial Intelligence in library and Information science is an exciting, interesting and great step ahead towards perfection. We expect to have the next generation PCs much more adaptive, responsive and interactive, which will even refuse to work on being misused. Nowadays AI is used in different spheres of science, technology and engineering, such as even space researches and space travels. So AI

applications in Library and Information Science is and should be the burning issue of the day.

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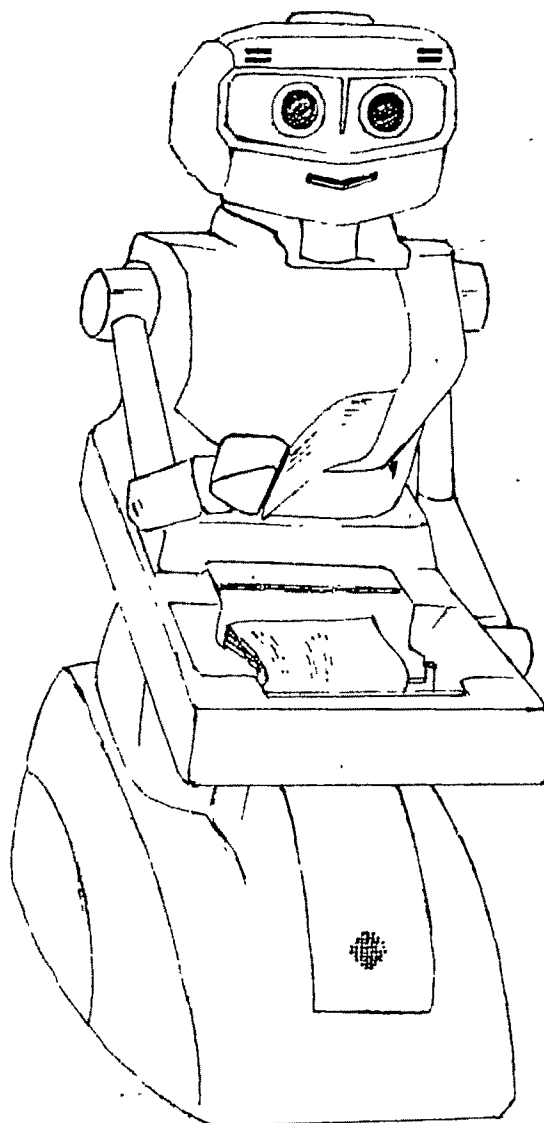
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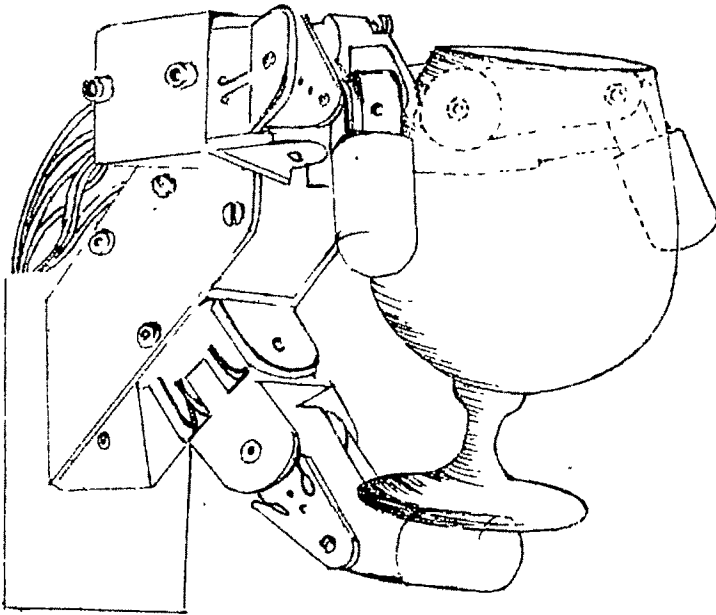
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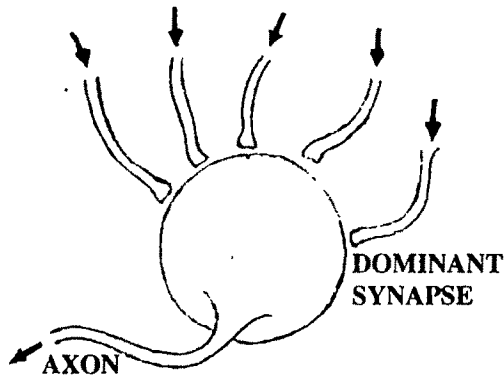
ROBOT WITH VACUUM GRIPPER HOLDING LEAFLET

Fig-1

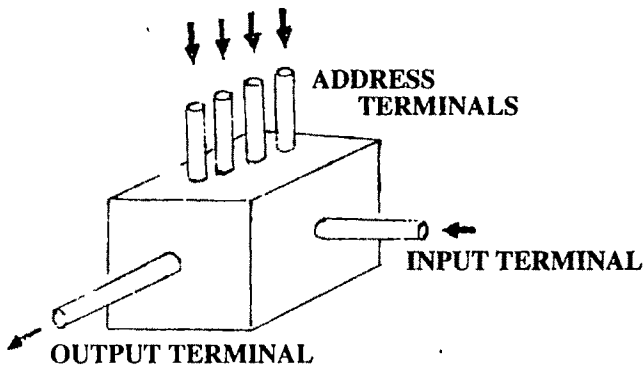


GRIPPER OF ROBOT ARM WITH TOUCH SENSORS

Fig-2



NERVE CELL (NEURON)



RAM ELEMENT

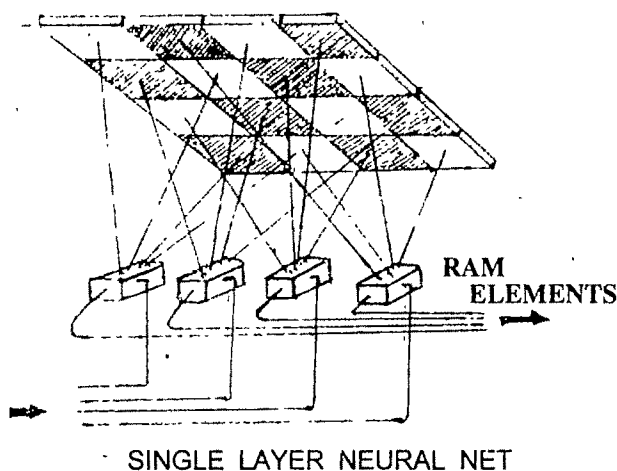


Fig-3

Abstract :

Artificial Intelligence has already stepped into the field of Library and Information Science with a promising future for its application. Use of Artificial Intelligence in library and information science is becoming an essential part with time as information is being generated every now and then and its overloading consequences. So, Artificial Intelligence, a distinguishing feature of fifth generation computers capable of handling complicated tasks must assist in tasks particularly in library and information science. AI includes within its purview expert systems, Natural language Processing, Robotics including important aspects like Pattern recognition and Neural net technology. Research works encompass a wide range of topics like online information retrieval, classification, cataloguing, abstracting, indexing, document selection and many more though mostly in theoretical and prototypic stage, commercial systems are developing at a rapid pace. We expect to have a revolutionary change in the evolution of library and information science with application of Artificial Intelligence where librarians will have a perfect coordination with AI community without threatening the existence of each other rather assist its human counterpart in enhancing the library and information services for the betterment of the society.

TAGORE SOCIETY FOR RURAL DEVELOPMENT IN THE SUNDARBANS AS COMMUNITY INFORMATION CENTRE

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1. Introduction :

Community information is considered to be that information required by members of the public to make effective use of the resources potentially available to them in the communities in which they live. This information is not something that will help only in their social or political or cultural or psychological development but something that will help them in their economic development, which encompasses all other development.

The community information center is an organization, which will gather together all the information needed by a particular community and also disseminate them. It works for the daily problem solving of the people of the community which may be with regard to their livelihood, housing, household finance, marriage, employment and so on. A community information center mainly serves the people who are somewhat isolated from others due to cultural differences or lack of awareness or poverty.¹

Mainly a community information center serves two types of functions: the first is concerned with the nature of the information (service) provided, i.e. information in the community to help people with daily problem-solving and the second is in raising the quality of their lives.

The Citizen's Advice Bureau in Britain and Veteran's Information Centers in the USA are the very first example of community information center. Both these centers have been set up during the war to help people cope up with wartime problems.²

Community Information Service has its tradition in the ancient and British India.³ Community Information Centers of those days (e.g., Pally Samity of Tagore) worked for non-formal education, sanitation, social justice, library service, etc. These are some of the basic issues related to people's daily life. In present India also, there is ample scope of development in these areas. Community Information Service should work for this. But the most important work that they should do is to promote socio-economic states of disadvantaged people. They should provide information to the community people to enable them to 'raise their living standards to the level of their rights in the law'⁴ and to participate effectively and successfully in the social, political, legal and economic process. These are the criteria on the basis of which we can judge the activities of a Community Information Service.

At the very recent time mentions can be made of M.S. Swaminathan

* Reader.

** Ajlta Bhattacharyya, Sudipto Ghosh Chowdhury, Ashok Kr. Jana, Avijit Pramanik, Susanta Mondal, Pradip Das, Gauranga Bhakta, Sayoni Roy and Sanku Bilas Roy; MILS students (2003-2004).

Research Foundation, which is providing the Agrarian as well as the fishermen community in Tamil Nadu with many information services needed to improve the quality of their daily lives.⁵

Objectives :

The primary objective of this study was to investigate and to judge the functioning of Tagore Society for Rural Development as a Community Information Center and hence to establish the fact that Community Information Center has its root deep into the Indian soil. It would also be possible to highlight on the future development of services rendered by Tagore Society for Rural Development with a number of suggestions emerging from this study.

Scope :

The study was carried out on an organization working for the development of socio-economic status of the rural people. The Rangabelia Project running under the Tagore Society for Rural Development (TSRD) was chosen as the area of study, the geographical area being the village Rangabelia and its adjacent villages falling under the Gosaba Block of Sundarbans. The TSRD is operating there a comprehensive rural development project under its various wings. All the wings, their activities and organization structures were the main theme of our study. With these, information about the local people, their occupations, economic conditions, educational status, means of communication were also gathered.

Methodology :

We collected data from the employees of the TSRD, by using the questionnaire method and interview method through free flow conversation. Initially, we undertook a pilot project.

TSRD-ITS Origin, Development and Activities :

During the past three decades, it has been observed that a number of non-government organization working for the rural community has mushroomed which aim at rural development in agricultural methods, development of irrigation, use of high quality seeds, in primary health services and sanitation. But the difference perhaps lies in the facts whether they are able to understand properly the problems of the rural population, whether they are able to prepare their work designed according to the community and whether they have total independence in designing their fields of action. The Tagore Society for Rural Development (TSRD) satisfies all these criteria. Also they are providing community services in all possible areas of rural development, it is a dynamic organization, which are not confounded to information services alone, they provide for sustainable basic needs. The most remarkable thing about TSRD perhaps is the fact that it is a comprehensive rural development project planned and created by the active participation of the rural mass.

The TSRD imbibed with Tagore's philosophy and the spirit of rural development interventions for more than three decades. Visionaries like Lokanayak Jaiprakash Narayan And Pannalal Dasgupta were the Chairman and Secretary of the society at the very inception. The mantle thereafter fell on the broad shoulder of Tushar Kanjilal who proved to be an able successor. The society through its sound track record has now carved out a niche for

itself in the national NGO arena and stepped into the new millennium with the wide recognition of national level grass-root organization.

Its vision is to bring back rural life in all its completeness by making the villagers self-reliant and self-respectful.

Its mission is—

- Creation of self-reliant rural community by adoption of participatory approach;
- Acquaintance with the country's rich tradition and heritage for getting imbued with the spirit of using efficient use of modern resources;
- Provision of opportunities to the disadvantaged sections of the community in general and women, in particular, in the formulation and implementation of the project activities to shape their future destiny;
- Creation of awareness, conscientization on social, economic and political incidences which have kept the rural mass and the poor deprived;
- Emphasis on women empowerment.

Its objectives are—

- To increase the economic viability of the poor and sub marginal families through improved agriculture and exploration of alternative income sources;
- To enhance the capacity through conscientization, awareness and skill formation;
- To improve health status;
- To provide education facilities for enhancing the literacy rate and to provide the scope for continuing education;
- To empower women;
- To make village populace environment friendly;
- To prepare community for disaster management.

Development Strategy :

The overall development strategy rests on—

- Consideration of a human being with all his facets by taking a holistic view which finds an expression in the adoption of a comprehensive approach to the development programme;
- Adoption of a participatory approach by organizing the participants into groups, both male and female, at the micro-level planner, the smallest denominators of the execution, monitoring and evaluation process. The society prefers the role of a facilitator rather than an operator or implementer.

Development Spread :

The society's Development spread currently extends to 1,112 villages,

Distributed over 7 blocks of 10 districts in the states of West Bengal, Jharkhand and Orissa.

Almost all the project areas suffer from adverse geo-climatic situation where either flood or draught and sometimes both are common occurrences bringing in untold misery to the local populace. This apart, areas are socially,

economically and educationally backward and are inhabited by a high proportion of scheduled classes and tribes and backward classes. Infrastructurally too, the project areas are undeveloped. It warrantably follows that in a dismal scenario with all these handicaps the local people are in the grip of object poverty.

A Resume on Rangabelia Project :

In the formative and early phase (1969-1974), society's development intervention covered a vast tract in as many as seven districts of West Bengal, namely 24 Parganas, Nadia, Murshidabad, Burdwan, Midnapore, Birbhum and Bankura. During this period, the society conducted experiments for evolving viable strategies for rural development. The models so developed gained acceptance of the state government and finally adopted by them. For example, utilization of electricity for agricultural development till then was practically unknown in this part of the country. Energisation of irrigation pumps was an unviable proposition for prohibition cost and it remained beyond the reach of the poor farmers. The society pursued the state government to reduce the energisation charge drastically and arranged bank loan for the farmers. Soon it was quite popular and the state government thereafter took up large-scale energisation programme. Likewise, group ownership of energized shallow tube wells by poor farmers, joint utilization of water and initiation of other productive activities in big private pond, under the agreed cost and return-sharing basis were path-breaking achievements of the society. Harnessing the irrigation potential through excavation and re-excavation of pond for rain water harvesting, lift irrigation, check dam, cross bundh for augmenting agricultural productivity had been the constant endeavour of the society.

Organizing nurseries and afforestation in large scale constituted one of the main components of the society's development intervention when the environment did not assume the status of a catchword. The old concept of dharmagola (grain bank) was revived but on community basis which has recently been broached by the Government of India for easy accessibility of food at local level and for easing pressure on district and state level central warehouse. Formation of 'Swabalamban Samity' (self-reliance group) and Mahila Samity (women group) at that point of time can be termed as benchmark of organization and people's participation which are now quote thick in the air. The society operates ten comprehensive rural development project—five in the state of West Bengal—the Rangabelia Project, Sagar Project, Bolpur Project, Rajnagar Khoirasol Project and the Japan Project, two in the state of newly created Jharkhand (erstwhile Bihar) and three in the state of Orissa.

Rangabelia Project in West Bengal, being situated in the Sundarbans, has to face the severe frowns of nature-frequent cyclones and attendant floods, breaches in embankment, inflow of saline water in the islands and eco-degradation surrounded by the Bay of Bengal, Sunderban delta remains cut off from the mainland. Stripped of the basic amenities like potable water, electricity, road transport, the area is a veritable backwater. The soil, being saline, is unproductive and cultivated land is largely mono-cropped. A large section of the population eke out their living by collecting honey, wood and catching fish. The population mainly comprises Oraon, Bhumij and Munda tribes. In 1969, a modest intervention was initiated by a local headmaster, the present secretary of the society, with his aides, which subsequently mustered the

confidence of the local people. The Rangabelia project thus came on its own firm standing and later came under the umbrella of the society in 1975. Thereafter, with coming in of financial support and recognition, the project could build up an infrastructural network for providing services to the local people in various sectors. The project's main activities revolve round in providing need-based services such as agro-services centres, soil testing laboratory, model dairy farm, women's industrial co-operative, non-formal educational centre, comprehensive health programme equipped with mobile health care units and hospital with diagnostic care services, nutritional rehabilitation centre, etc. Presently, the project covers poor marginal families of 256 villages.

The cyclones and floods wash away the development efforts pursued over for a number of years at the flick of seconds. This high unsustainability status of the development initiatives in view of grave risk factors had prompted the project to initiate disaster management involving and organizing the people of the Sunderban in its entirety.

Discussion :

T.S.R.D. in its Rangabelia Project, is rendering services to the local people through various departments. The objectives, as discussed earlier, are to enable the disadvantaged people of the area to meet the basic needs of life. The following wings of TSRD have been discussed—Agricultural activities, Greening, Animal Husbandry, Education, Health, Women's Empowerment, Disaster Management.

Agriculture :

One of the main objectives of the Rangabelia Project was to bring about economic development of the disadvantaged local people. It was observed that the agricultural development was hindered by various problems like salinity, lack of irrigation, weakness in infrastructure, lack of finance, pettiness of institutional loans, absence of technological know-how, increase in mortgaged land, etc.

In the first stage of the project, TSRD wanted to increase the fertility of the land. They took measures to convert mono-cropped land into a bi-cropped one. The activities concerned in agricultural improvement are—

1. Selection of the second crop like green chillies, potato, peanut, sunflower, mung, different vegetables, etc. and expanding its production.
2. Digging of canals, old and new ponds for irrigation.
3. Giving opportunity to the farmers in the use of agro-instruments like tractors, powers-tillers, spray-machines the village committee is responsible for loan repayment; etc. through agro service centers and distribution of high quality seeds, insecticides, etc.
4. Soiltesting in project laboratory and advising people on the use of balanced fertilizer;
5. Helping people to get bank loans; to get back mortgaged land; in this case the project is the guarantor and
6. Increasing income by preparing vegetable gardens in and around houses; and
7. Introducing the use of storehouse for preventing farmers to sell their crops at a lower rate.

The following statistics can give us an idea about the success of the Rangabellia Project in agricultural development—

1. In 1975, Rabi crop was grown in only 3.6% of the cultivated land, now the area has increased to about 30%.
2. In 1975, the income per acre was Rs. 2400-2500, it has now increased to Rs. 14000-16000.

The Reproduction and Child Health wing of the Rangabellia Project of T.S.R.D. was started in 1988 as an awareness scheme for guidance of children above 5 years, as a sex guide for adolescents (13-19 years), for mothers of age group (15-45 years), on family planning, good health, birth control and their advantages and disadvantages.

Irrespective of bias, this project also makes people aware of the government projects and their comprehensiveness. This project acts as a supplement to the government projects. The finance is assisted by UNICEF, Sanitary Mart and the Ministry of Human Resources. Untrained nurses were prevented to assist in child birth by the Health Mahila Samity, and Non Formal Education Zonal Committee at different places. Response is comprehensive for all. Changes in particular subjects per house are performed in culture, society, health, education, finance etc. The same project continues in Bihar, Jharkhand and Orissa. The awareness level of womenfolk and their outspokenness, speak in favour of the success of the programme. This project is going on in about 213 villages, 8 blocks with 3,600 people intensely affected by the programme.

The Health wing of the Rangabellia Project has both an awareness activity as well as runs a hospital and has other health related activities. Their activities can be summarized as follows :

- It brings about awareness programme on hygiene, awareness about water-borne diseases and their prevention and helps to preserve drinking water.
- Other activities include family planning, mother and child health care etc.
- Also, there is a twenty-bed hospital with diagnostic facilities.
- The Mobile Health Care Services has 72 clinic points from where vaccination and treatment is done.
- Treatment is done on a regular basis in the hospital, with X-ray, blood, urine and stool tests and ECG etc.
- Child Ward and Nutritional Rehabilitation Centre—The third degree cases are identified and immediately sent to this center for nutrition and treatment, children, pregnant women, and lactating mothers are examined, temporary and permanent family planning methods are advised and delivered.

The women health workers are engaged in health awareness, vaccination primary health examination and arrangement of health camps in villages.

Mahila Samity, Rangabellia Project-a wing of TSRD (Tagore Society of Rural Development)

It must be admitted that Mahila Samity is one of foremost wings in the advancement of women organization project. Late Smt. Bina Kanjilal, wife of respected Sir Mr. Tushar Kanjilal who is the present secretary of Tagore Society

fell the necessity to do something for the distressed and helpless women of Sundarban.

As a result, a 'Mahila Samity came into existence in 1976 as a wing of TSRD under her leadership in Rangabelia with the objects of providing women the much needed self-dependence and removing the gender-based inequality and injustice on women from the society, namely dowry-system, domestic violence, illiteracy, sexual assault etc. Since then the samity has been taking an important role in fulfilling the growing demands of the local women.

Rangabelia Mahila samity a wholly women organization consists of three sections— (i) industrial cooperative society (ii) training cum production center (iii) village organizations.

The samity has employed 6 permanently paid workers who are mainly in charge of all the sections of it.

The industrial cooperative society founded in 1977, has 364 women as members who belong to any of the four divisions of work. Four divisions are (i) Tailoring (ii) Knitting (iii) Weaving (iv) Printing. Tailoring department produces readymade garments; Knitting and weaving departments are engaged in manufacturing the textile goods like shares, bed sheets, side bags, tablecloths, etc.; and printing department manufactures batik and block printed products.

There are 25 workers in this industrial co-operative who work on the basis of piece rate.

The samity runs a training cum production center where women are trained to produce afore mentioned products. Here women who are pursuing the vocation of her own or engaged in the production unit are trained free of cost. About 40 seats for the three months training with the provisions of food and lodging are filled through interview. Such 36 batches have been given training to the needy, helpless women like widow, divorcee etc.

The products of the two aforementioned sections are sold from the showrooms located in front of Mahila Samity premises and four other sub-centers. The co-operative is trying to negotiate with various agencies, schools; NGO's to extend its scale-base.

Village organization of this Samity runs literacy programmes for the women. They are fighting against social maladies like dowry system, violence against women, etc. They are also endowed with the power to solve the social problems, which the local government fails to solve. They have organized some saving groups where women who do not go to the bank for the lack of courage, deposit small amount of money. There are 350 such saving-groups from where they themselves can get loans from their own money when needed and thus avoid the harassment from mahajans (money-lenders). The village organization gets money from various schemes such as DOWCRA.

This Mahila Samity faces serious problems like lack of marketing of the products, want of a skillful manager, communication gap etc. Fund is also a major problem.

In spite of all impediments the samity faces, we are stunned at its endeavour to the women empowerment and the upliftment of standard of living of the women of this area. It has greatly succeeded in bringing a great number

of women under its umbrella of security and make them aware of their abilities. But the samity is conscious that it has a long way to go.

The achievements of Mahila Samity are as follows:

- Starting with a humble 35 members in three villages, this organization has extended to 300 villages in 8 blocks with 6011 members.
- Until now 1353 women are trained in training centers.
- In all 211 small saving groups formed and about 7,13000 money was deposited.
- The product produced by the training-cum-production center is sold by four shops owned by the organization. On an average a total of 400,000 is the income.
- In the production center 40 economically backward women earned Rs. 400-800 working in two shifts.

Non-Formal Education :

The Non-Formal Education (NFE) branch was set up in around 1977-78. The Government funds the work. The workers are selected by a committee of 9 members consisting of Panchayat Members, teachers of high and primary school, eminent persons of the village and the guardians. The aim of the project is to provide non-formal education to children between 9-14 years, non-school goers, and school dropouts. After getting education in the non-formal schools these children can supplement the loss of years in the primary schools and return to mainstream education.

The students of the NFE are selected on the basis of a survey conducted by the above mentioned village committee. The village education committee conducts the adult education centers.

This wing of TSRD is spreading its activities in 8 blocks namely Gosaba, Basanti, Hingalganj, Sandeshkhali II, Canning I, Canning II, Kultoli and Sagar. There are at present 200 centers managed by some supervisors. Each supervisor has under his or her supervision 25 centers. Each center has 25 students and 1 teacher. Minimum qualification for a supervisor is Graduation, which can be relaxed to Higher Secondary if the person is much experienced. At least fifty percent of the supervisors should be female. The minimum qualification of a teacher is Madhyamik and at least seventy percent of them should be female. The teacher should be a person who is actively engaged in the project and is connected with the other branches of the project. The teacher must visit the homes of at least 2 students every day.

The teachers are provided with training for three days before they start to teach. Refresher's course is also conducted by Ramakrishna Mission, Narendrapur. The department every year provides 6 Teacher's training courses.

Books and teaching materials are provided by the Government State Resource Center and Ramakrishna Mission also provide materials for teaching.

The department has 2 full time workers who receive scale payment and 2 peons who receive payments on the basis of the money received by the scheme. The teachers receive a monthly allowance of Rs. 400 but due to paucity of funds this payment cannot be made regularly.

The department maintains record of all the students and teachers in all the centers of NFE. The records are meticulously maintained. The number of

students are subdivided according to different status i.e., school drop outs, or non-goers; number of students going from NFE to primary schools; number of students dropping out again from the primary school, number of students completing the primary education, number of girls in the school—all such records are maintained with year wise account being available. The government is now asking for these records from the department. The NFE has turned out to be a very efficient part of Rangabelia TSRD.

Animal husbandry :

In 1975, Rangabelia project started with the main objective of converting the agricultural system of one-time cultivation into two-times or more. To do this, most of the villagers were engaged in cultivation. Consequently, cattle and domestic birds were not given enough care, and they started to die. In this situation the Society began to think of doing something for the domestic animals of this area and set up the Veterinary wing. It was started in the month of April, 1984. The project is run on the division's own fund.

The Veterinary section of the Rangabelia Project gives services in the areas of 7 blocks-Kultali, Canning 1 and 2, Basanti, Gosaba, Hingalganj, Sandeshkhali 1 and 2.

The services given are:

1. Vaccination: Vaccination is given to domestic animals in a regular basis, as to cows twice a year and to the domestic birds 4 times in 45 days.
2. Distribution of animals: The wing distributes chickens to poultry farmers. They rear them and return back to the wing for selling.
3. Hybridization : Artificial insemination is done between Indian and foreign cows.
4. Sanitation
5. Care and management
6. Deworming
7. Fodder cultivation: Fodder is distributed free of cost.
8. Training programme: Training is given to unemployed local youth on poultry, dairy, piggery and custom services on Artificial Intelligence, treatment, immunization, fodder cultivation and artificial insemination. Besides, sick animals are treated at free of cost.

Field workers first survey the needs of the people in different areas. Then they are given programmes accordingly from the main office. Workers gather in two meetings monthly. Local governments as Gram Panchayets are involved in the process of coordination and communication with the people. Meeting is the main way of communication in the awareness programme.

The wing is trying to make its own fund by selling various animal products as milk, eggs, etc. But this purpose is not fulfilled yet due to lack of a good market.

Activities during the period of 1984-2000 are :

1. More than 4,000 awareness programmes
2. 156 training programmes
3. Deworming of about 1,75,000 animals

4. Artificial insemination of more than 4,000 animals
5. Distribution of more than 80,000 chickens
6. Vaccination of various animals
7. Treatment of more than 3 lakh animals

Greening Project of TSRD :

One wing of the TSRD is the greening project. The initiative of the project was taken up in around eighties. Like all its wings this wing also has a significant piece of History. It goes like this—Around the eighties, Pannalal Dasgupta came across a book "One Straw Revolution" written by Masanabu Fukuoka, on natural farming without chemical fertilizers. The book was an eye-opener for not only him but for many others who understood the danger of excessive dependence on chemicals. Deeply influenced, Dasgupta invited Fukuoka to India. During this period they discussed the dangers of modern methods of farming as well as their ecological eventualities.

Then Fukuoka invited Dasgupta to Japan, where he was introduced to the Kyoto Forum which provided financial support to the organizations which were engaged in ecological and afforestation programmes. During this Period TSRD was also taking up such projects, and now funds became available from the Kyoto forum. An agreement was signed between TSRD and the Kyoto Forum, and TSRD started the greening project in the three states of West Bengal, Orissa and Bihar.

Their achievements of the programme so far are provided here:

- 11756 hectares of land have been brought under the programme in the 3 states.
- Over 18904000 trees have been planted.
- There has been a steady increase in survival rate with community participation and currently it is much better than the national average.
- Employment has been provided to a large number of people involved in plantation and maintenance work.

As we visited the Rangabelia wing of the Tagore society, it was amply evident that surely a lot of work has been done. The roads were lined with trees many of which have grown up to provide shielding from the sun's rays on a hot day. The plantation consisted of timber, fuel giving trees, fruits and fodder. A small nursery has also been set-up, which sells seeds, and plants to the villagers as well as visitors. Apart from the agricultural development, the greening project is also doing its bit to furnish the people with a love for nature.

The CAPART :

The CAPART wing of Rangabelia project is involved with implementation of CAPART schemes—construction and sanitation. The main staffs of this wing are an engineer, who is the in-charge of the wing, supervisors and an account.

CAPART stands for Council for Advancement of People Action and Rural Technology. It is an autonomous organization of the Central Government which gives scheme-based money to NGOs for rural development including housing, sanitation, public cooperation, drinking water, agriculture, etc. It launches

schemes in any particular area of the country on the basis of the needs of the local people. A committee is formed with some administrative officers of the Central Government and officials of different N.G.O.s to consider and take decision on sanction of any particular scheme. The sanction of any scheme is done in some phases, the first of which is pre-funding monitoring. The next steps are as follows:

Pre-funding monitoring → Partly sanction → Midterm monitoring Report
→ Full sanction → Final monitoring.

After final monitoring, if any negative report is given against any organization, then it is blacklisted and ruled out any future sanction.

Rangabelia Project started to implement CAPART schemes in 1985. From then, the following schemes have been implemented:

1. Culverts were made for the passage of irrigation water in the areas of Rangabelia, Baghbagan, Jatirampur, Satjelia, Lahiripur, Mitrabari, Lakshagan, etc.
2. Low-cost latrines were made in the locality.
3. 'Smokeless chullah' project was launched in the concerned areas. This project is now directly controlled by the areas. This project is now directly controlled by the Government of West Bengal through the fund of the UNICEF.
4. Reanimation of ponds—started from 1986-87. Selection of beneficiaries was done by the village workers in coordination with Gram Panchayat. Ponds of 70 ft × 8 ft were created. These were used in cultivation, pisciculture and poultry farming. 80 ponds were created so far each of which cost Rs. 7,500 (CAPART gave Rs. 5000 and the beneficiary Rs. 2,500).
5. The most important of all the scheme was 'Low-cost housing'. It was started in the year 1989. Low-cost houses were made for the distressed people of Rangabelia, Gosaba, Kumirmari, Pujali and Lahiripur. Out of total 800 houses made so far, 400 were in these areas. Another 400 were made in Gosaba, Basanti, Hingalganj, and Sandeshkhali. The cost of each of these last 400 houses was Rs. 19,500/- (CAPART gave Rs. 15,150/- the beneficiary— Rs. 1700/- in cash, Rs. 2300/- in kind). In the year 1996, the engineer of the CAPART wing got an idea of making low-cost, space-economic and cyclone-resistant houses. These houses had pucca wall, tin shade and peculiar hexagonal shape, which was a resistance against cyclonic storm. These are still giving good results.
6. Tube-wells (500-700 in number) were made in the areas of Sagardwip, Canning, Basanti, Hingalganj, Hasnabad and Sandeshkhali 1 and 2 for drinking water.

All of the above schemes have been completed. The wing is now thinking of new schemes like modernizing 'dheki'.

Rescue activities for natural calamities :

To the people living in the Sundarbans, flood, cyclones, tidal waves, destruction of the river banks & damage of cultivable lands by saline water is regular occurrence. From the beginning of the project, in 26 years, natural calamities in a large scale occurred 11 times.

The project works even during disaster and stands by the affected people. The following helps are given:

- Sheltering
- Provision of dry and cooked food.
- Provision of clothing.
- Sanitation and health care.
- Expulsion of the stored saline water.
- Rehabilitation facilities—repair and construction of houses.
- Conversion of the school and community center to a flood center by adding a floor to them.

The Changed Role :

Owing to the destructive flood and cyclone in 1988 the project brought change into future plans. From 1990 loan given was stopped and a village development fund was created with the fund. Secondly, the project started working as an aid and resource center and gives priority to services based on no profit no loss basis.

Trying to resolve basic problems :

After the natural calamity in 1988, the project stated realizing the problems of people of the Sundarban as:

- Through 3500 KM, damage of the dam.
- Loss in natural balance due to falling of trees.
- Absence of means to fight natural calamities.

The project came to the conclusion that :

The 30-35 lakhs people of the Sundarban should come forward to speak up for themselves. The actions taken by the project were—The 30-35 lakhs people of the Sundarban should come forward to speak up for themselves. The actions taken by the project were—

- Awareness camps arranged in 318 villages.
- In block level, 14 awareness meeting were held.
- Outlines of formation of an interpretation center were given.

After Sundarbans have been declared 'world heritage site' and 'Biosphere Reserve' the local community had taken the improvement of the Sundarbans in its agenda.

Conclusion and Suggestions :

Thus, we observe that, the TSRD in Rangabelia has covered almost every aspect of rural development, particularly highlighting the problems of the marshy area of the Sundarbans. They not only initiated the developmental process, trying to solve the problems of the people of the area to the best of their ability, they continued their activities through almost 30 years, expanding their initiatives, in spite of the constraints faced by the organization in various disciplines. Through their activities they have almost revolutionized the activities and lifestyles of people of the area and it has been highly successful as an information center so far.

Therefore, it can be speculated beyond doubt that if it continues its policy of understanding the needs of the people of the area and trying to solve their problems with their active participation, it would continue its successful endeavour of being an effective CIC not only now, but also in years to come.

However, the organization has scope of improvement.

Information provided by the organization is not organized into government sector, educational sector, agricultural sector, health sector and general sector. Information communication is poor, as a proper communication system is not developed. Electronic and electrical media (microphones, etc.) are not used to communicate. Hence, the information dissemination is slow and many a times is backdated. Also, they are not equipped with modern IT related equipments like computers for handling of increased workload, for greater efficiency, opportunity for new services, cooperation and centralization. There is no computer and telephone network in vogue.

The objective of providing social justice to the downtrodden through community development programme has not been given due attention. Youth welfare programme for economic development and otherwise, like volleyball clubs, poultry farming, pottery, etc. was not taken care of. Special emphasis on welfare of SC/ST/OBC has been overlooked. They also do not have any permanent marketing arrangements for sale and purchase of agricultural and other commodities on wholesale basis. There is also no psychological study center. Neither there is any provision for fisheries (which is a vital occupation of the people of the Sundarbans) or training center for the development of fisheries. No weather alert information for the aversion of natural calamities is prevalent. The importance of TV, radio and satellite communication as a means of information collection and dissemination is completely ignored. Also, market survey research in Kolkata and its suburbs is not conducted and disseminated. Sufficient number of speedboats and launches for the transport of the sick for remote to urban communication is also lacking.

It is suggested that the organization should rectify itself in terms of policies and programmes in the aforementioned spheres in order to evolve into a more effective and efficient CIC.

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Abstract :

This article studies the prospects of Rangabellia Tagore Society For Rural Development as a Community Information Centre.

ELECTRONIC JOURNAL CONSORTIUM INITIATIVES IN INDIA—A BRIEF OUTLINE

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1. Introduction :

Periodicals are the chief sources of information for the research scholars, teachers and students. In the age of proliferation of literature, it is very difficult to find the required information within a short period of time. Electronic journals are gaining importance and for this type of crisis situation. Printed version of journals are costly for today's libraries. Almost all the libraries are facing financial problem and trying to find out the way of saving the cost. Electronic version of journals are cheaper than the printed version of journals. Consortium initiatives are taking for purchasing the electronic journals at a low cost. For this reason, the electronic journal consortium are running successfully. All the member libraries of the concerned electronic journal consortium are enjoying the facilities and providing the services successfully.

Group of Libraries come together with common interests to fulfil their requirement by joining hand. One of the library or agency can act as coordinator for identification of resources, managing consortium services, managing affairs related to common interest, implementation of its objective etc. The aim of consortium is to achieve what a group of libraries can not achieve individually (Choln & Karsidappa, 2002).¹

Online Dictionary for Library and Information Science (ODLIS) defines library consortia as "An association of independent libraries and/or library systems established by formal agreement, usually for the purpose of resource sharing. Membership may be restricted to a specific geographic region, type of library (public, academic, special), or subject specialization".²

Library consortia refers to cooperation, coordination and collaboration amongst the local, regional, national and international Libraries for the purpose of Library Union catalogue, information resources, computerized cataloguing and bibliographic information.

2. The Main Objectives of Library Consortium are as follows :

- (i) Increase the cost benefit per subscription.
- (ii) Promote rational use of funds.
- (iii) Ensure continuous subscription to periodicals/journals.
- (iv) Guarantee local storage of the information acquired for continuous use by present and future users.
- (v) Develop technical capabilities among the staff in operating electronics resources.
- (vi) Have strategic alliance with the institutions of common interest resulting in reduced information cost and improved resource sharing.^(3,4)

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3. Benefits of Library Consortium are as follows :

- (i) To gain economic leverage as: Lowest unit prices, controlled costs, increased economic bargaining power.
- (ii) To gain information access leverage as: Much, much more access.
- (iii) To gain operational leverage as: Maximize cost effectiveness of computer investment, customize access to group needs.^(3,4)

4. Library Consortium initiatives in India:

4.1 INDEST :

The Ministry of Human Resource Development (MHRD) in India, has set up a "Consortia—based Subscription to Electronic Resources for Technical Education System in India" on the recommendation made by the Expert Group appointed by the Ministry under the chairmanship of Prof. N. Balakrishnan. The consortium is named as the Indian National Digital Library in Science and Technology (INDEST) Consortium. The INDEST Consortium is the most ambitious initiative of its type so far in India. It would not only benefit 38 major technological institutions in the country [including Indian Institute of Technologies (IITs), Indian Institute of Science (IISc), National Institute of Technologies (NITs), Regional Engineering Colleges (RECs), Indian Institute of Information Technologies (IIITs) and other], being an open-ended proposition, it also invites all AICTE—accredited and UGC—affiliated institutions to join hands with the leading engineering and technological institutions in the country.

INDEST is offering the following digital products to Indian academic and R & D institutions: IEEE / IEE Electronic Library online, Science Direct / IDEAL Library, Springer Link, Proquest's ABI / INFORM Complete, Applied Science and Technology Plus (ASTP) Online, ACM Digital Library, COMPENDEX on Ei Village, INSPEC on Ei Village, SciFinder Scholar, Web of Science, and MathSciNet.⁵

4.2 FORSA Libraries Consortium :

Forum for Resource Sharing in Astronomy & Astrophysics (FORSA) was established in 1981. Group was formed for the sharing of resources in areas common to research and development for group members. FORSA is subscribing to common database full text journals on behalf of all member libraries for their user.

Members of FORSA are Indian Institute of Astrophysics (IIA), Inter-University Centre for Astronomy & Astrophysics (IUCAA), National Centre for Radio Astrophysics (NCRA), Physical Research Laboratory (PRL), Raman Research Institute (RRI), Tata Institute of Fundamental Research (TIFR), Nizamiah Observatory (NO) and Uttar Pradesh State Observatory (UPSO).⁶

4.3 UGC INFONET Programme :

INFLIBNET consortia is modernizing the University campuses with state-of-the-art campus wide networks and setting up of its own nation wide communication network named UGC—Infonet. Under the UGC Infonet scheme selected gateway portals will provide customized access to the on line resource and resources of other Libraries. On line resources can be accessed at anytime with any form of internet connections.

INFLIBNET under UGC INFONET has started the consortium of e-journals subscription for selected University Libraries. Right now more than 50 University Libraries have been connected through this consortium and it is being planned to provide this service through higher band width of internet connection which will be given to the rest of the University Libraries in a phased manner.⁷

4.4 TIFR Consortium :

The seven associated libraries of the TIFR (Tata Institute for Fundamental Research), including the main centre in Mumbai, have been using the online versions of Springer journals through the Springer Link service for some time now, with very positive results. Further eight DAE funded institutes of similar size and standing would now also like to access the Springer journals. In addition, we at Springer feel that these libraries would also benefit from having access to Springer's e-book series. These offer unparalleled, quality information in the fields of computer science, mathematics, physics, chemistry and the bio-sciences.

The 22 e-Book Series, including Lecture Notes in Computer Science, Lecture Notes in Physics, Lecture Notes in Mathematics and the massive Landolt-Bornstein encyclopedia of Numerical Data and Functional Relationships in Science and Technology are offered at a fee of 17,000,- Euro for each institute for 2004. If purchased individually, the price would be about 80,000,- Euro.⁸

4.5 CSIR Consortia :

Council of Scientific and Industrial Research (CSIR), was established in 1942. It has 42 research laboratories spread all over the country. More than 22,000 persons are working as scientist, researcher, and scholars. National Institute of Science Communication and Information Resources (NISCAIR) (earlier known as INSDOC—Indian National Scientific Documentation Centre, New Delhi and NISCOM—National Institute of Science Communication, New Delhi) on behalf of CSIR has initiated consortium "Consortium for CSIR Laboratories for Accessing e-journals". This consortium negotiating with vendors for better pricing (NISCAIR, 2004).⁹

4.6 SNDT Women's University's LISA Consortium :

A minimum of five member universities under this consortia are getting benefit up to 20% of the listed price of the LISA CD apart from free web access from CSA.⁹

4.7 AGRIS for ICAR Institutes :

Under this consortium AGRIS (Agricultural Information System) database is supplied to 100 Indian Council of Agricultural Research (ICAR) institutes at 70% discount on the listed price.⁹

4.8 COMSAC (Consortium for Material Science and Aerospace Collection) :

The members of this consortium are getting discount up to 40% on the listed price from Cambridge Scientific Abstracts.⁹

4.9 DAE Consortia (Department of Atomic Energy) :

- Access to Science Direct online and over 1700 journals from Elsevier Science

- Access to over 2 million articles and 59 million abstracts from all fields of science
- Ability to subscribe more than 65% of non-subscribed journals
- Access to BioMedNet—Full text Trends and Current Opinion
- Access to Cell Press online.⁹

5. Conclusion :

Now we are living in the age of information explosion and for this reason there is a proliferation of literature in all subject fields. Due to financial crunch, various forms of information and information boom, the resource sharing and networking of libraries have emerged as important alternatives. Now it is clear that establishment of better consortium, integrating intellectual access are all the important steps for turning towards the 21st Century libraries and information centres. The libraries and information professionals of our country should seriously rethink and reinstitute consortium movement like developed countries for maximum utilization of resources at a reduced cost, time and space.

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Abstract :

The paper discusses about the various e-journal consortiums in India. The paper also discusses about the advantages, objectives and features of library consortia.

STATISTICS OF INTAKE AND RESULTS OF STUDENTS IN BLIS, MLIS, MPHIL, 2004, 2005

	Admitted	Appeared In Final Examination	Passed
BLIS, 2004	105	84	79
BLIS, 2005	109	80	70
MLIS, Part-I, 2004	19	13	13
MLIS, Part-I, 2005	24	21	19
MLIS, Part-II, 2004	15	14	14
MLIS, Part-II, 2005	13	13	13
MPhil, 2004	09	09	07
MPhil, 2005*	10	11	11

* One candidate from the previous year.

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